

# **APPENDIX 4B**

# DETAILED DRAWINGS FOR THE 200 AREA EFFLUENT TREATMENT FACILITY CONTAINER STORAGE AREA AND TANK SYSTEMS

**Outstanding ECNs** 

# **ENGINEERING CHANGE NOTICE**

1. ECN 647892

Page 1 of 27

2. ECM Category (merk one)		3. Originator's Name and Telephone No.	4. USQ Required?		5. Date		
Supplemental (X) Direct Revision []		AF Crane, 32230, S6-72, 372-3152		[] Yes [	X] No	09/21/98	
Change ECN []	- 1	6. Project Title/No.	./Work Order No.	7. Bldg./Sy	s./Fac. No.	8. Approval Designator	
Temporary [] Standby [] Supersedure [] Cancel/Void []		Access Stairs/A4055		1	25E	N/A	
		9. Document Numbers Changed by this ECN		10. Related ECN No(s).		11. Related PO No.	
		(Includes sheet no. and rev.) See Blk. 13a		. N/A		N/A	
12s. Modification Work	لـ	See I	12c. Modification Work		<del>,</del>	N/A ed to Original Condi-	
158. MODITICATION MOLK		No.	120. Modification work	combrace		or Standby ECN only)	
[X] Yes (fill out Bik.		EL-98-			ĺ	N/A	
12b) [] No (NA Biks. 12b,		005 <b>8.8</b> /M	Design Authority/Cog	Engineer	Design A	Authority/Cog. Engineer	
12c, 12d)		9/23/98	Signature & D			ignature & Date	
13a. Description of Chang	ge		13b. Design Baseline	Document?	X] Yes [	] No	
H-2-89033, Sh 1, F			H-2-89063, Sh 1,			,	
H-2-89036, Sh 1, F			H-2-89068, Sh 1,				
H-2-89039, Sh 1, F			H-2-89069, Sh 1,				
H-2-89040, Sh 1, F H-2-89044, Sh 1, F			H-2-89078, Sh 1,	REV 4		· ·	
11-2-05077; 511 1; 1						,	
See Continuation S	Sh	eet					
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		,					
					•		
	_						
14a, Justification (mark	O		[v] •	f 3	Pa - 21 2		
Criteria Change []		Design Improvement Facilitate Const	[X] Environmental			ty Deactivation []   Error/Omission []	
14b. Justification Detail	1 4	Pacificate Const	{ ] CORET. EFFOT/	Oursalon []	Design	error/unission []	
THE BODY THE COLOR DECOME	••						
Instellation of stairways is required to provide safe access when carrying equipment into the surge and verification containments.							
Informal design review po	er	formed by RJ Huth.					
15. Distribution (includ				79 /11	ł	RELEASE STAND	
MW Bowman S6- AF Crane S6-				-72 (1) -17 (1)*	S	EP 2/3 1990	
BS Darling T4-	_	- \ - /		-72 (1)	DATE:	·	
DL Flyckt S6-				-71 (i)		KANFORD L	
JE Geary S6-				-71 (1)*	STA:	RELEASE	
	-			,	~3	0 -	
*Advance Copy					1 /	~~~ ~~	

PAGINEPPING OF LABOR MOTION					-	1. ECN (use n	e. from pg. 1)		
ENGINEERING CHANGE NOTICE					of 27	647892			
16. Design 17. Cost Impact Verification ENGINEERING CONSTRU				TRICTION	18	. Schedule Impa	ct (days)		
Required		EKING			٠, ا		.,		
[X] Yes	Additional	[] \$	Additional	[] \$		provement Las	ñ		
[] No	Savings	1 2	Savings	[] \$		lay			
19. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 13. Enter the affected document number in Block 20.  BDD/DD									
Functional Design Criteri	. []		Design Report	[]		Ith Physics Procedu	1.1		
Operating Specification	• []		se Control Drawing			res Multiple Unit Lis	. LJ J		
Criticality Specification		ration Procedure T Spares Multiple Unit U Test Procedures/Speci			i La j				
Conceptual Design Repor	r []		Installation Procedure 7.1 Component Index			•	ii		
Equipment Spec.	" []	Mainte	Maintenance Procedure		ASI				
Const. Spec.	[ ] [ ]	Engine	aring Procedure		Hun	rtion []			
Procurement Spec.	[ ] [ ]	•	ing Instruction	[]	Con	ij			
Vendor Information		•	ing Procedure	ij	Elec				
OM Manual	l J	•	onal Safety Regulremen		ICR:	법			
FSAR/SAR	LJ F1	IEFD D	• •	ii	Process Control Manual/Plan 13				
Safety Equipment List	[ ]	Cell An	rangement Drewling	ii	Process Flow Chart [1]				
Redistion Work Permit	[]	Essenti	al Material Specification		Pure	Purchase Regulation [7]			
Environmental impact St	etement []	Fac. Proc. Samp. Schedule		[]	Tiel	ier Flie	ä		
Environmental Report	[]	Inspect	ion Plan	וֹז			ii		
Environmental Permit	ri Ti	Invento	ry Adjustment Request	ដ			ří		
indicate that the signing organization has been notified of other affected documents listed below.  Document Number/Revision Document Number Revision Document Number Revision  N/A									
21. Approvals									
Basis Ausbasieu (	Signature Date  Design Authority Af Crane QQ+ Crane 9-21-95 De				Signature Da  Design Agent AF Crane Care Communication				
	AF CIBILE CET C	,-ce	<u> 7-01-48</u>	PE	A. 0.0.0	<u>س حسم</u>	9-21-98		
Cog. Eng.				94			<del></del>		
Cog. Mgr. NJ Sullivan			4-22-18	Safety					
QA Safety				Design					
Environ.			Environ.						
Other			·	Other					
	4		<del></del>						
RJ Huth informal Design Rev	view- galat	T	9.22-98				<u>· · · · · · · · · · · · · · · · · · · </u>		
	V			DEDIGTMENT OF	<b>ENEDUA</b>				
				DEPARTMENT OF ENERGY Signature or a Control Number that					
		tracks the App	proval Sig	naturė					
				ADDITIONAL					
<del></del> -									

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ECH 647892 Data 9/21/98

H-2-89033, Sh 1, Zone D-3: Replace ladder with stairway.

H-2-89036, Sh 1, Zone E-4: Replace ladder with stairway.

H-2-89039, Sh 1, Zone B-4: Replace ladder with stairway & show new sidewalk.

Zone E-4: Replace ladder with stairway.

H-2-89040, Sh 1, Zone B-4: Replace ladder with stairway & show new sidewalk.

Zone E-4: Replace ladder with stairway.

H-2-89044, Sh 1, Zone B-4: Replace ladder with stairway & show new sidewalk.

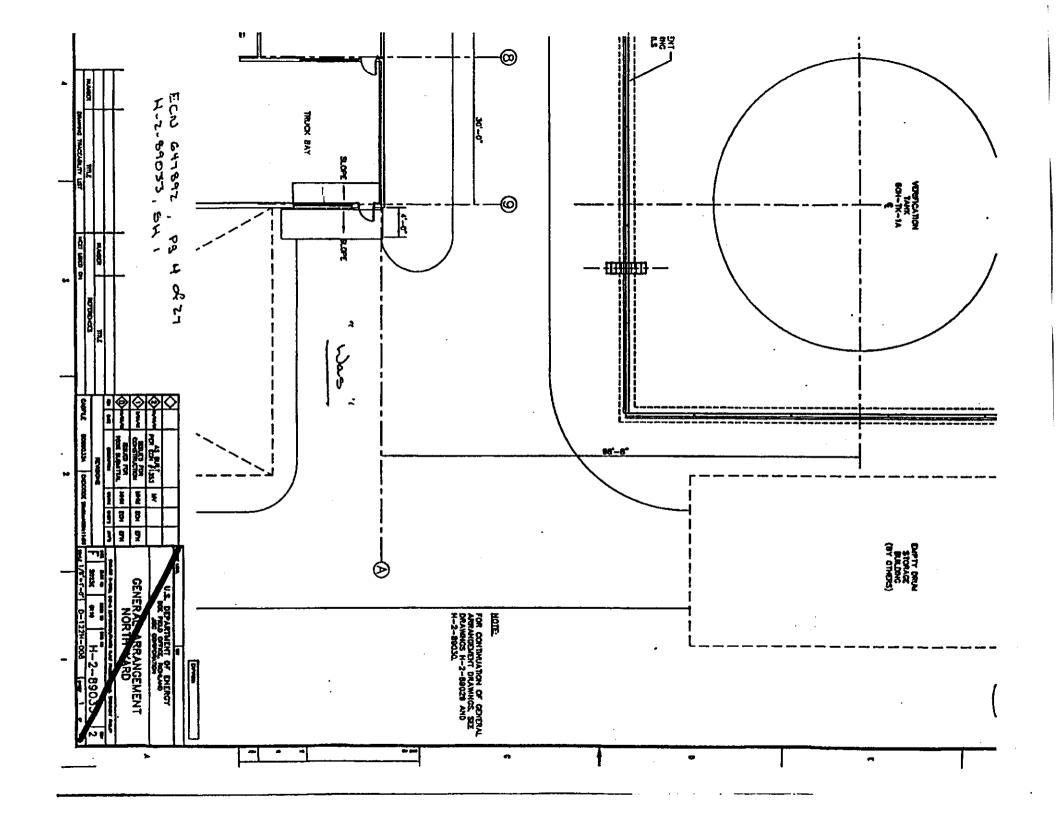
Zone E-4: Replace ladder with stairway.

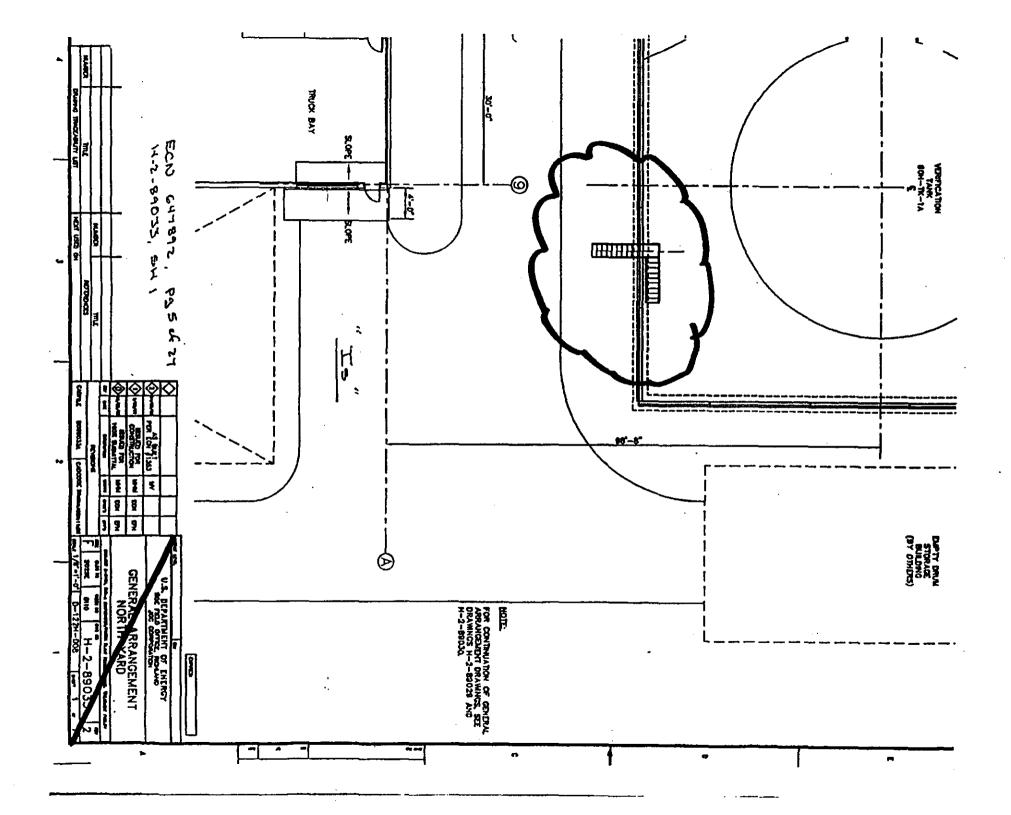
- H-2-89063, Sh 1, Zone F-2: Replace ladder with stairway. Delete 8'-9" dimension and ladder & crossover centerline callout. Change Section 4, Dwg. 89069 callout to read "See Section For Foundation Information".
- H-2-89068, Sh 1, Zone C-3: Replace ladder with stairway. Delete 10'-0" & 3'-5 1/2" dimensions, landing and ladder & crossover centerline callout. Change callout to read "See Section For Foundation Information" with reference to Dwg. 89069, Section 4.
- H-2-89069, Sh 1, Zone A-6: Add "minimum" to foundation width dimension (2'-0") callout. Change foundation text to read "Ladder Or Stairway Concrete Foundation (Locate In Field)". Change ladder description text to read "Aluminum Pre-Engineered Ship Ladder With Platform & Return, O'Keefe's Model 522-10 Or Equal, Or Aluminum Pre-Engineered Stairway. See VI Supp. 50054 For Stairway Detail."
- H-2-89078, Sh 1, Zone A-7: Change detail title to "Ladder Or Stairway Step Off Pad".

Zone B-6: Change callout to "Ladder Or Stairway" from "Ladder".

Zone B-7: Add "minimum" to step off pad length dimension (38").

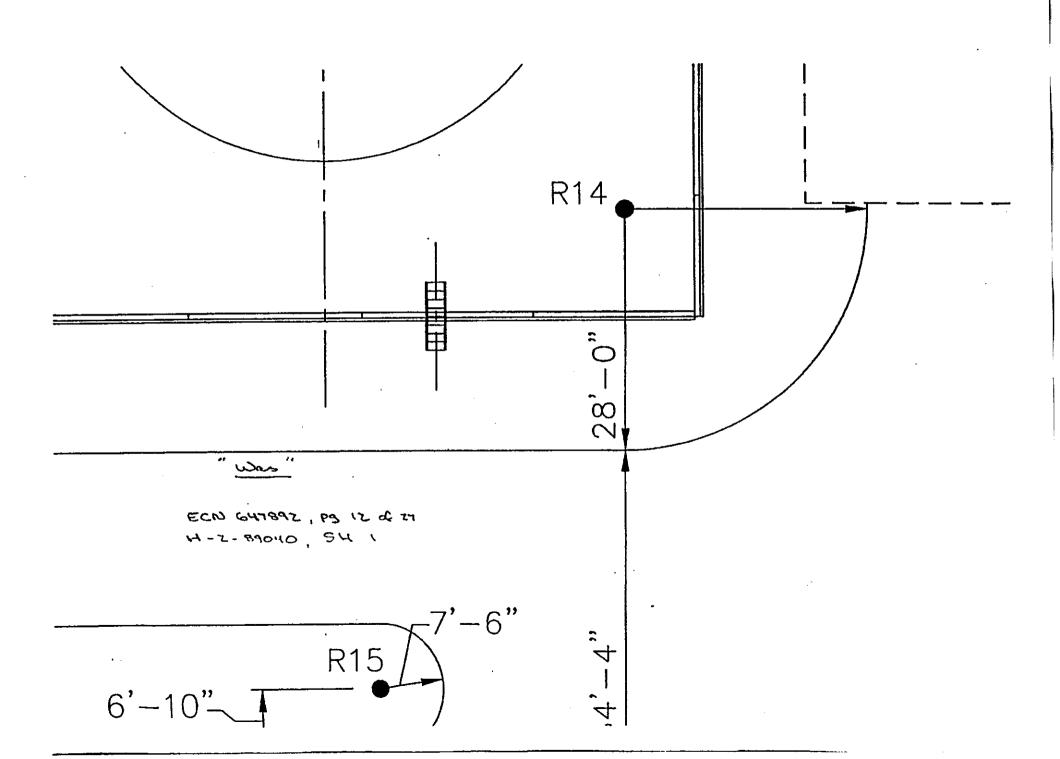
Zone B-8: Add "minimum" to step off pad width dimension (30").

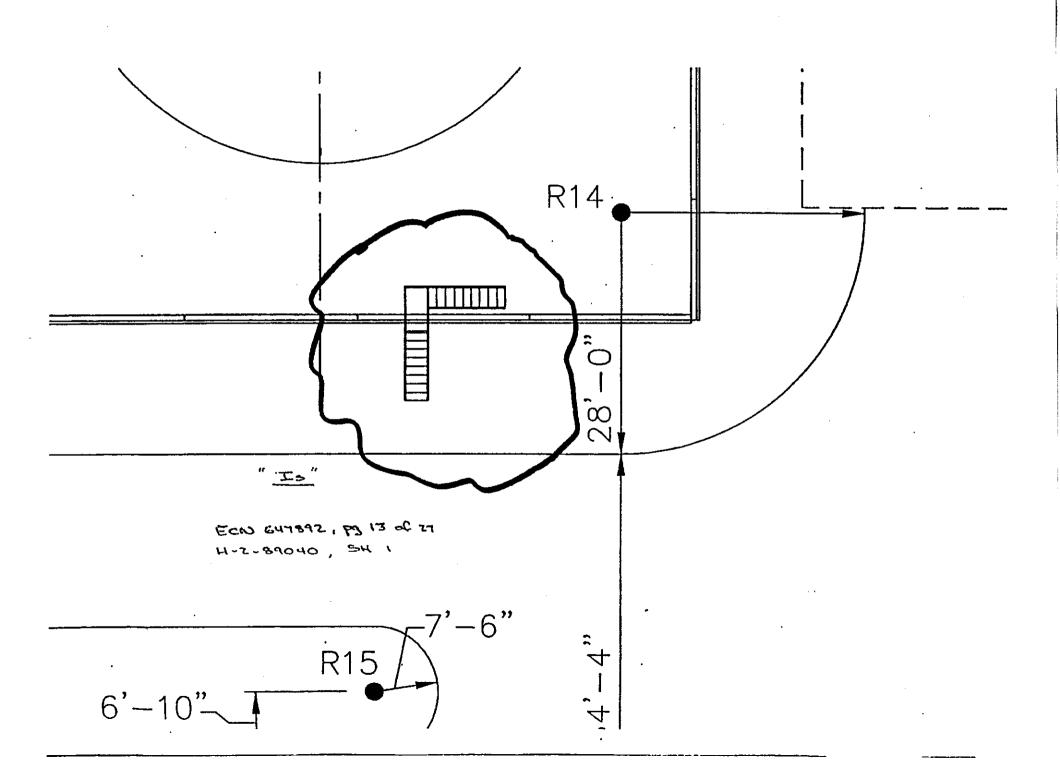


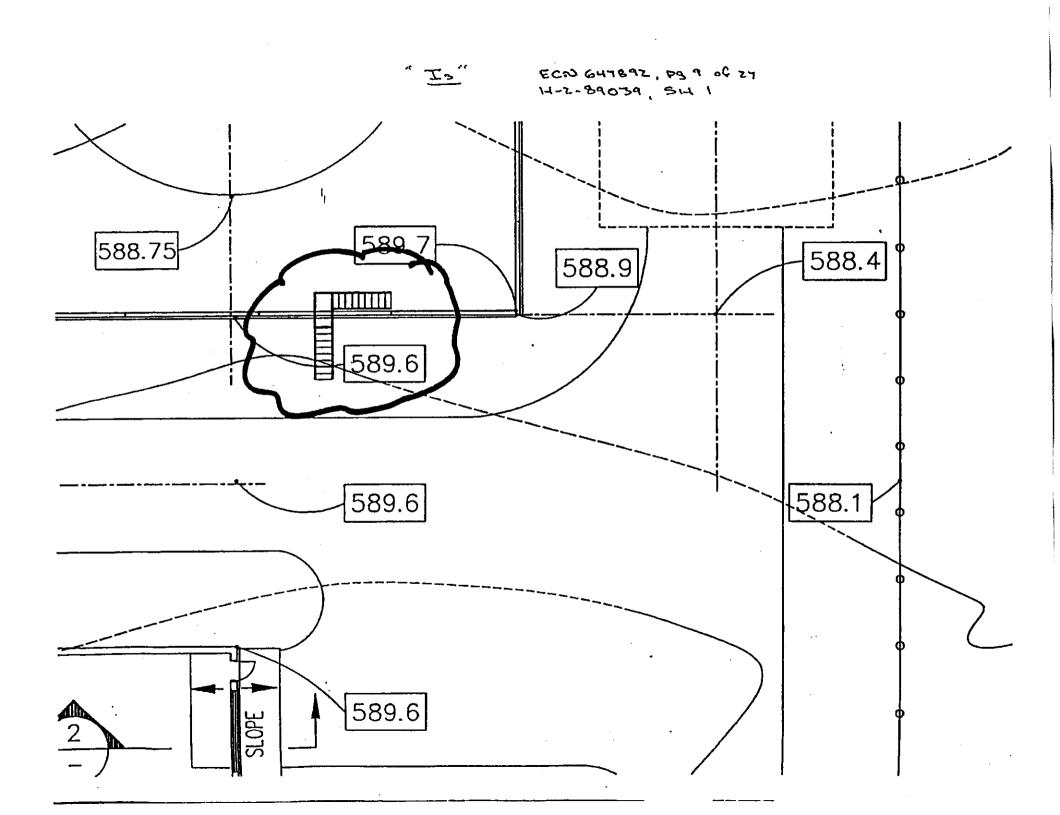


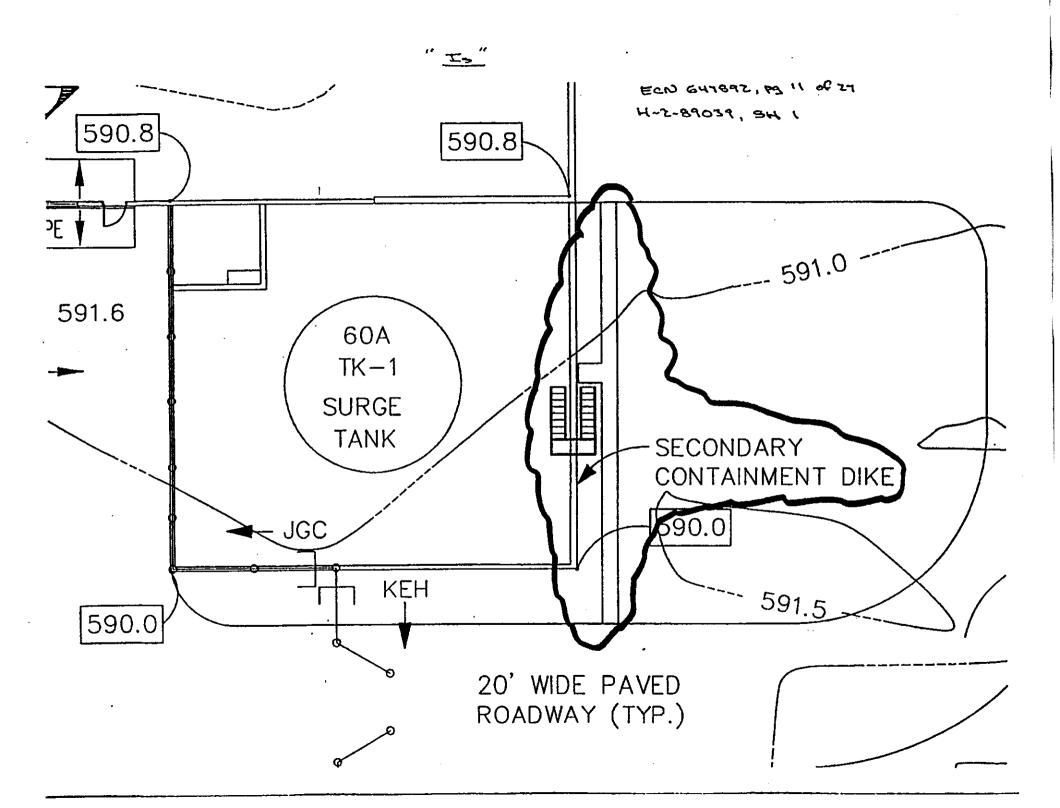
0.192 H-2-84036 SH 1 9.165 0.162

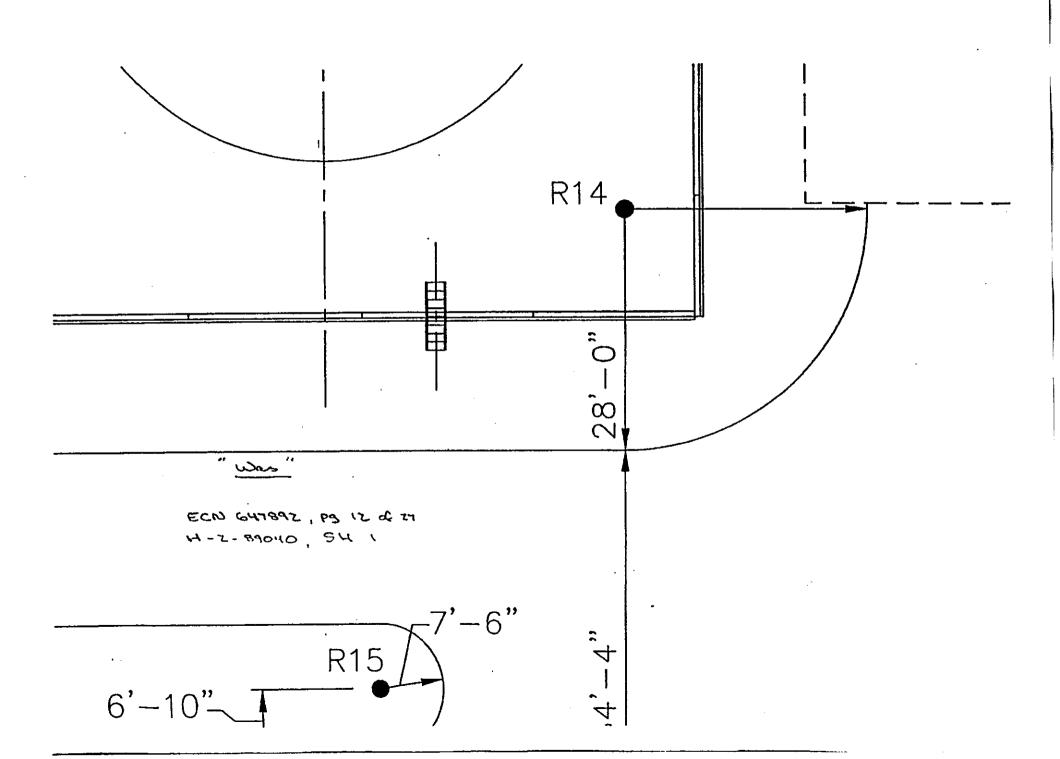
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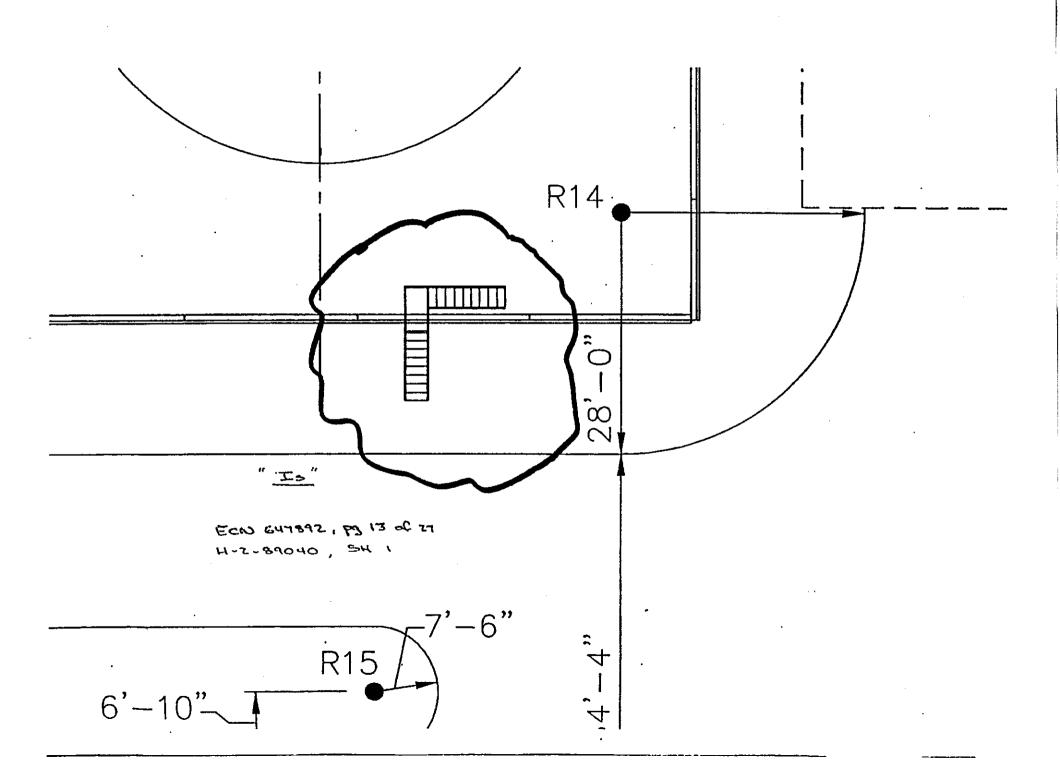




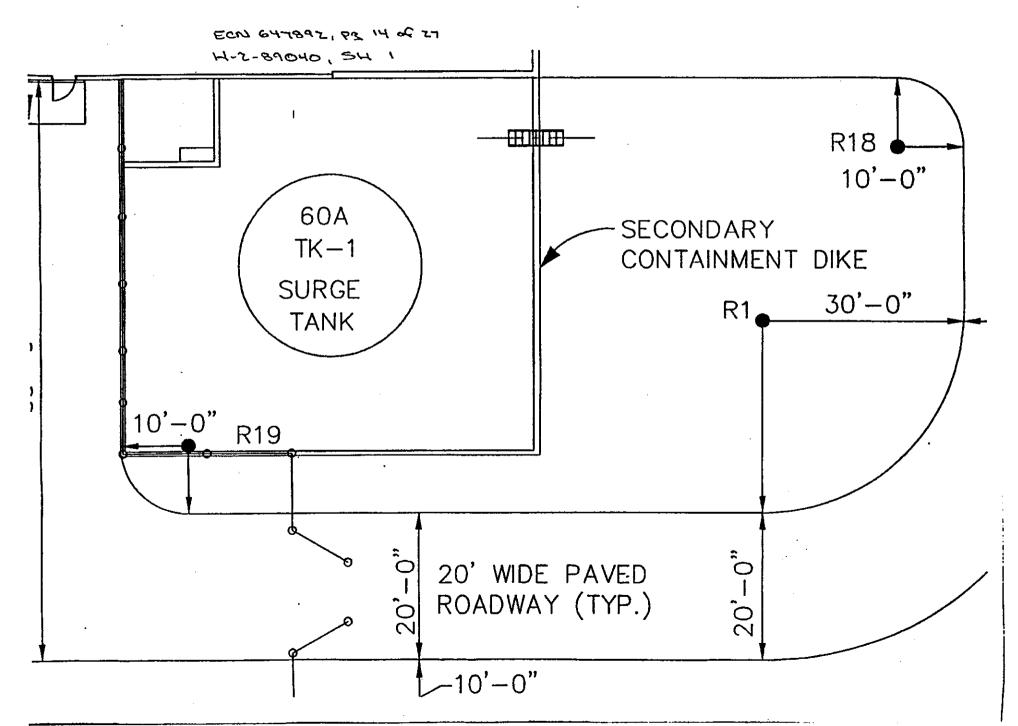


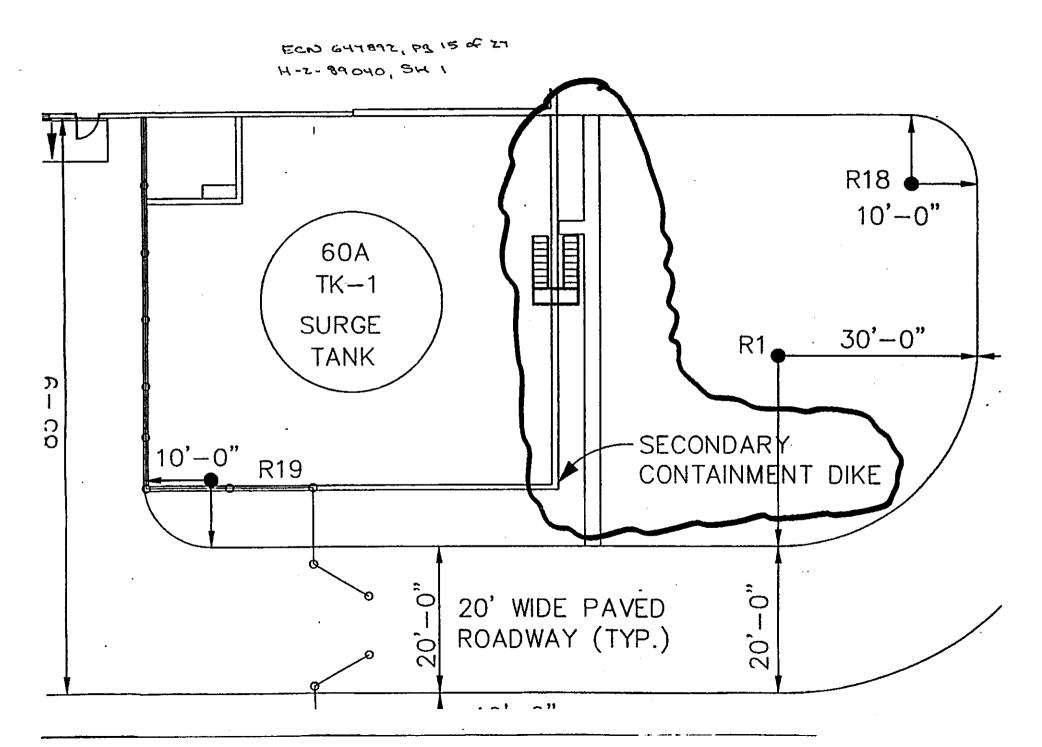






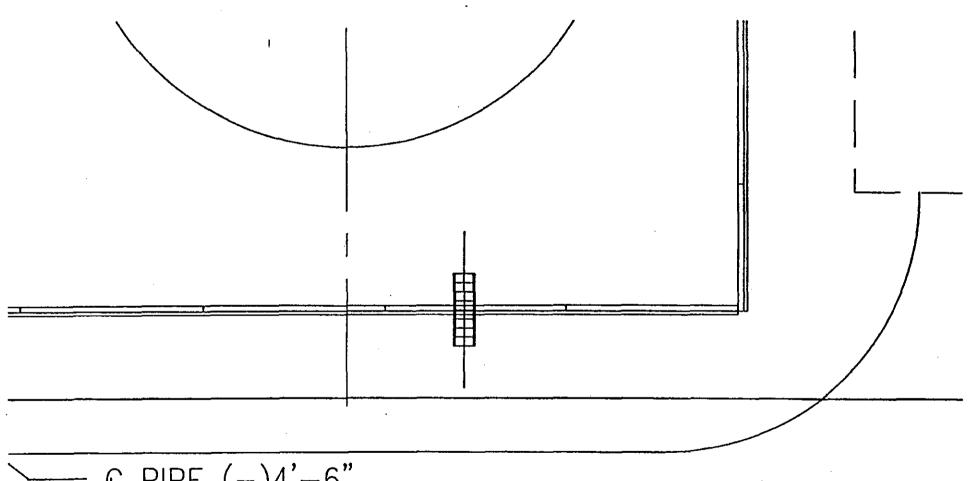
Was "





" <u>who "</u>

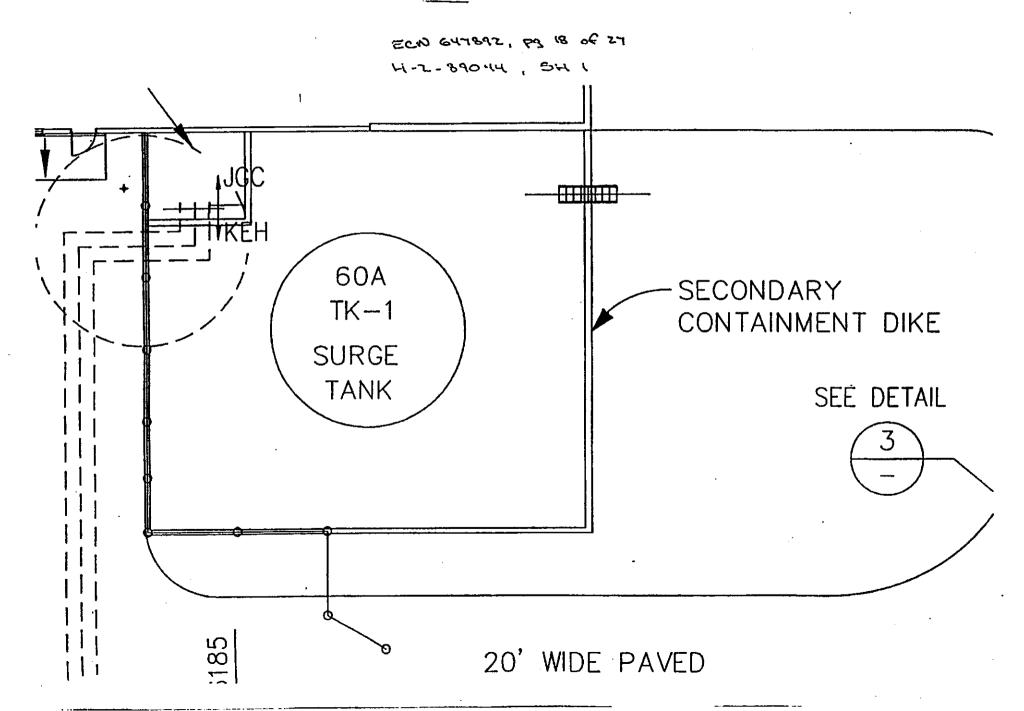
ECN 647892, FG 16 of 27



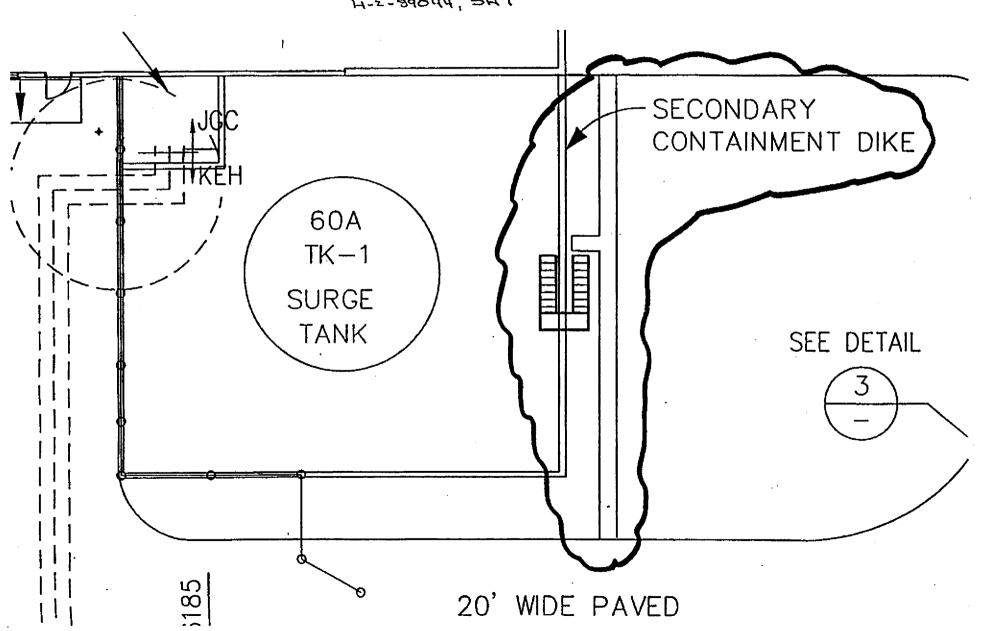
© PIPE (-)4'-6" BELOW GRADE

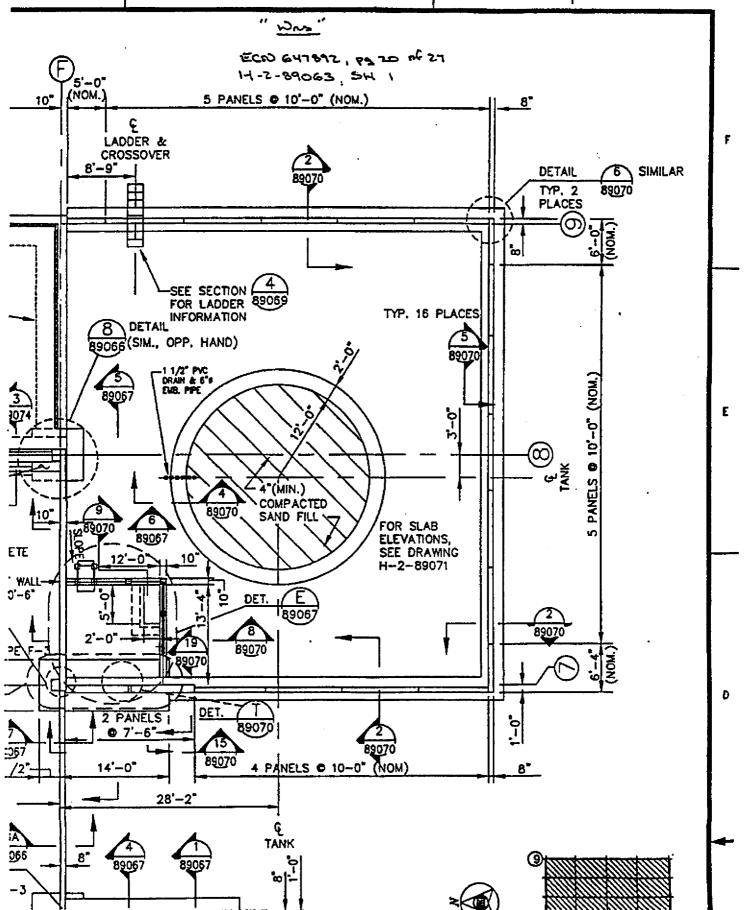
ECO 647892, Pg 17 of 27 H-2-89044 , SH 1

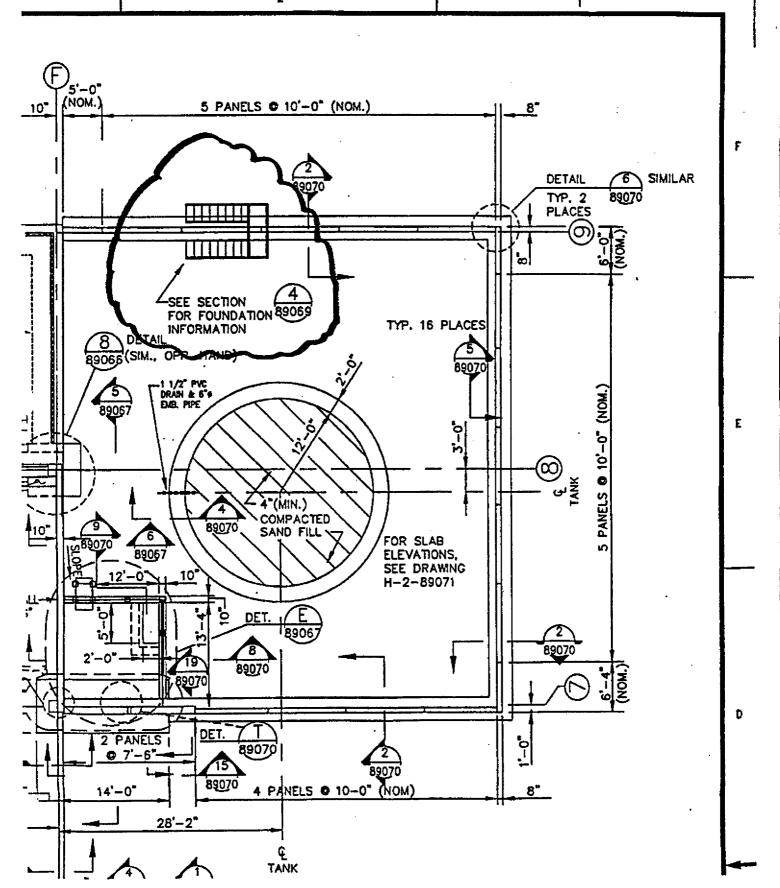
© PIPE (-)4'-6" BELOW GRADE <u>" was "</u>



ECO 647892, Pg 19 of 27 H-2-89044, SH 1

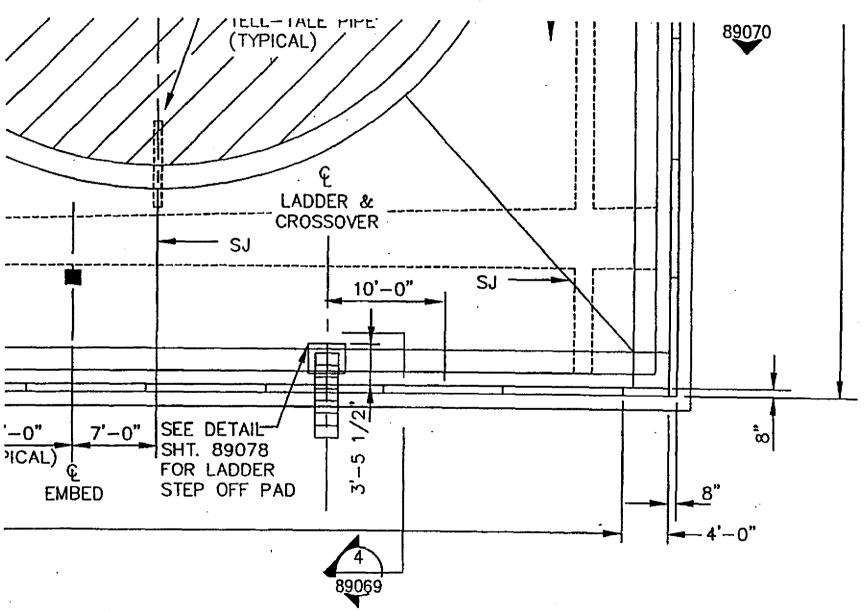




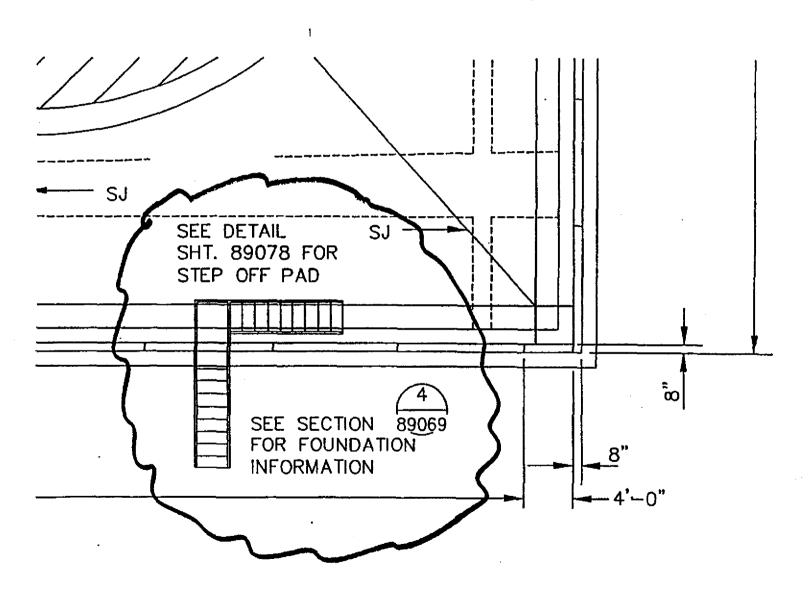


"<u>~</u>"

ECO 647892, Pg 22 of 27

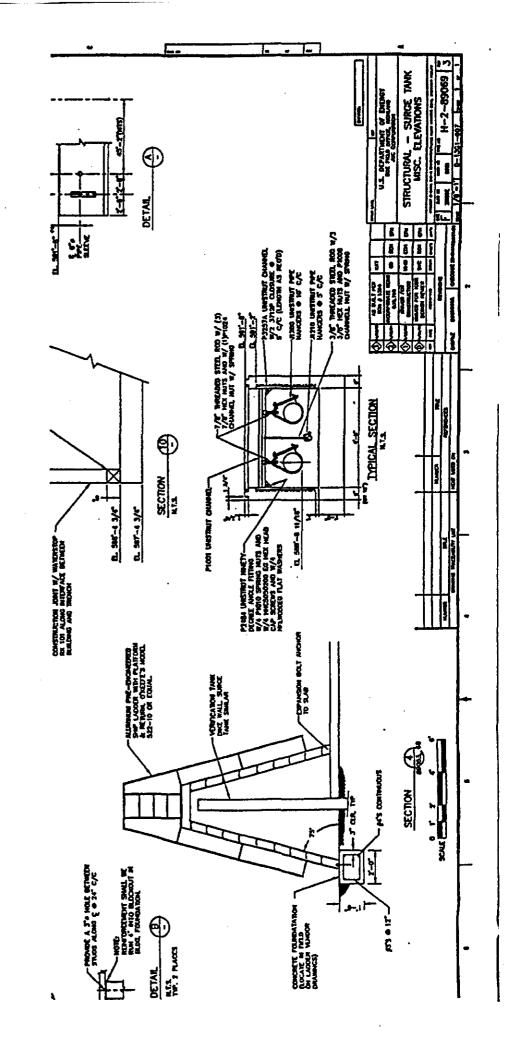


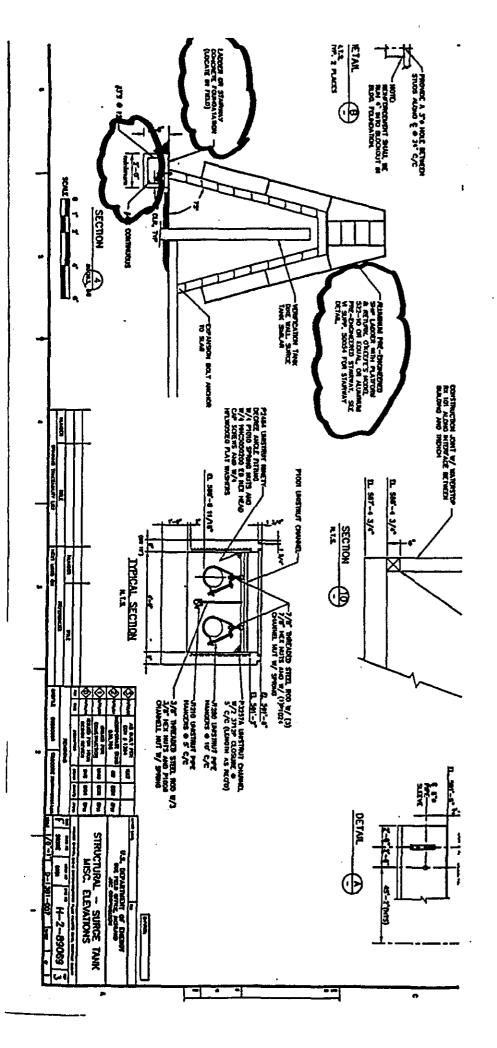
H-2-89068, SH 1 .



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ECAS G47892, PG 24 of 27 14-2-89069, SH 1





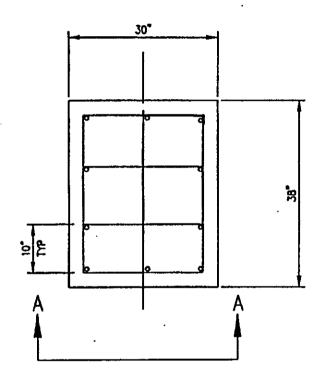
H-2-89069, SH 1

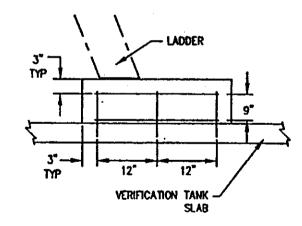
H

Was "

ECO GUTBAZ, PG ZG OF Z7







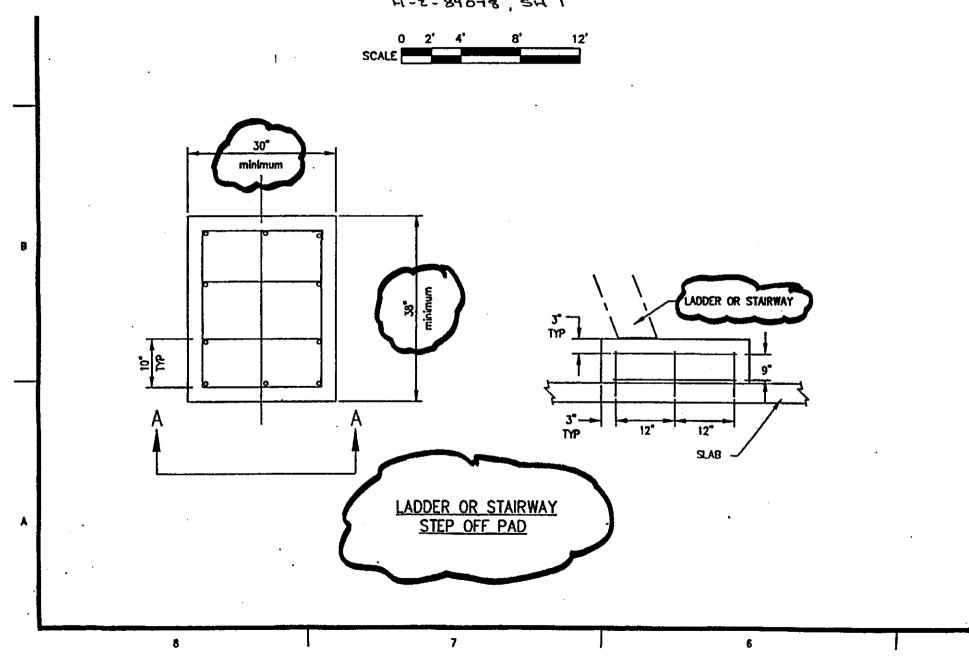
SHIP'S LADDER PLAN VERIFICATION TANK

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ECD G47892, PG 27 = 27 H-2-89078, SH 1



			ESSE	NTIAL	L 1.ECN 641703		
CPF 18	ENGINEERING	CHANGE NOTICE	Page 1 a1교リ		Proj. ECN		
2. ECN Category (mark one)	3. Originator's Name and Telephone No.	, Organization, MSIN,	4. USQ Required?		5. Date		
•	RN Wagner/32200/S6-71/376-446		[] Yes [X] No Ma		lay 13. 1997		
Supplemental (X) Direct Revision []	6. Project Title/No./Work Order No.		7. Bldg./Sy		. Approval Designator		
Change ECH [] Temporary [] Standby []	Misc. Mods and As-Builts for ETF Load-In Station		2025E/5 200 Ar	9A.60M/ ea ETF	NA :		
Supersedure [] Cancel/Void []	9. Document Numbers Changed by this ECN (includes sheet no. and rev.) See Block 13A		10. Related ECN No(s).		11. Related PO No.		
12a. Hodification Work	12b. Work Package	12c. Modification Work	Complete 12d. Restor		ed to Original Condi-		
[X] Yes (fill out Blk.	EL-96-00208, EL-97-00343		"ition (Temp		NA		
[] No (MA Blks. 12b, 12c, 12d)	22 37 000 10	Design Authority/Cog. Engineer Signature & Date			ority/Cog. Engineer		
13e. Description of Change	, I	13b. Design Baseline		X] Yes []			
This ECN implements		changes:	_				
<ul> <li>As-build sample valve and tanker vent valving.</li> <li>Add drain lines and valves to Load-In Station pump cases.</li> <li>Add bell-reducer funnels and valving to suction of Load-In Station pumps.</li> <li>Replace "Facility" with "Station" in all Load-In drawing titles.</li> <li>Identify status of Load-In Station drawings to Essential or Support.</li> <li>Piping, fittings and jointing methods to meet the requirements of Hanford Site piping specification Class M-9. Install, inspect and test the new piping installation in accordance with ASME B31.3 and Addenda for Category D fluid service.</li> </ul>							
(Block 13a continue		•		•	<u> </u>		
14a. Justification (mark of Criteria Change []	ne) Design Improvement	[X] Environmental	[]	facility (	Deactivation []		
As-Found [X]	Facilitate Const	[] Const. Error/C		•	ror/Omission []		
14b. Justification Details  Remove flow orifice in transfer line from Load-In Station to increase flow rate.  As-build sample valve and tanker vent valving for configuration control.  Add drain lines and valves to Load-In Station pump cases for improved contamination control.  Add beli-reducer furnels and valving to allow priming of Load-In Station pumps.  Replace "Facility" with "Station" in drawing titles to reflect the status of the Load-In Station as part of the 200 Area EIF, rather than a stand-alone facility.  Identify status of Load-In Station drawings to Essential or Support, as appropriate.							
H. J. Sullivan S6-72 1 J. E. Geary S6-71 2 R. N. Wagner* S6-71 2 C. M. Towne S6-74 1 J. L. Vigue S6-74 1 J. F. Berger S6-74 1 T. W. Dallas S6-71 (* Advance Copies)	A. K. Yoskum S. P. Biglin* E. A. McNamer* B. S. Derling D. P. Neisen	S6-72 1 S6-71 1		BATE MAY	2 7 1997 HANFORD ID:		

EN	CHANGE NOT	Page 2 of		no. from pg. 1)		
16. Design Verification	17. Cost Impac	INEERING N	1	· · · · · · · · · · · · · · · · · · ·	18. Schedule Im	ect (days)
Required			Additional COM	STRUCTION		N K
[X] Yes	Additional	[] \$		[] \$	Improvement	[]
L No	Savings	[] \$	Sevings		Delay	<u> LJ</u>
19. Change Impact R that will be af SDD/DD Functional Design Criteria Operating Specification Criticality Specification Conceptual Design Repor Equipment Spec. Const. Spec. Procurement Spec. Vendor Information OM Manual FSAR/SAR Sefety Equipment List Radiation Work Permit Environmental Impact Str	fected by the ci	hange described Seismic Stress/ Interfec Calibral Inatalla Maintel Enginee Operati Operati IEFO Di Call Azz Essenti Fec. Pro	In Block 13. Enter It/Strees Analysis Design Report the Control Drawing tion Procedure tion Procedure tring Procedure ing Procedure ing Procedure onal Safety Requirement	tr the effected door  []  []  []  []  []  []  []  []  []  [	documents identifiestment number in Blo Tank Calibration Manu Health Physics Proced Spares Multiple Unit It Test Procedures/Spec Component Index ASME Coded Item Human Factor Consid Computer Software Electric Circuit Schedu ICRS Procedure Process Control Manu Process Flow Chart Purchase Requisition Tickler File	ck 20.  uel []  ture []  listing []  iffication []  eretion []  ule []  ual/Plen []  []  []
Environmental Report	[]	inspect	ion Plan	[]		[] []
JCS Data	mber/Revision abase ant Index)	•	ocument Number/Rev		Document Number	
21. Approvals  Design Authority - Cog. Eng R. N. Cog. Mgr R. J. QA Safety Environ. Other	, , , , , , , , , , , , , , , , , , , ,	de la constante de la constant	5 22 93 5 22 93 5-23-17	Sign Agent PE QA Safety Design Environ. Other	gnature	Date
				DEPARTMENT OF EME Signature or a Co tracks the Approv	ntrol Number that	

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ENGINEERING CHANGE NOTICE CONTINUATION SHEET
                                                                                                                                  Page 3 of 24
Documents changed by this ECN (also see attached drawing changes):
            H-2-88766, Sheet 4, Rev. 2
H-2-88779, Sheet 4, Rev. 0
H-9-203, Sheet 1, Rev. 0
H-9-203, Sheet 4, Rev. 0
            H-2-817968, Sheet 1, Rev. 1*
            H-2-817969, Sheet 1, Rev. 1*
             H-2-817969. Sheet 2. Rev. 1*
             H-2-817969, Sheet 3, Rev. 1*
            H-2-817969, Sheet 3, Rev. 1*
H-2-817969, Sheet 4, Rev. 1*
H-2-817970, Sheet 1, Rev. 1*
H-2-817970, Sheet 2, Rev. 1*
H-2-817971, Sheet 1, Rev. 1*
            H-2-817971, Sheet 2, Rev. 1*
            H-2-817972. Sheet 1. Rev. 1*
            H-2-817973, Sheet 1, Rev. 1*
           H-2-817974, Sheet 1, Rev. 1*
H-2-817975, Sheet 1, Rev. 1*
H-2-817976, Sheet 1, Rev. 1*
H-2-817977, Sheet 1, Rev. 1*
H-2-817978, Sheet 1, Rev. 1*
H-2-817980, Sheet 1, Rev. 1*
H-2-817981, Sheet 1, Rev. 1*
            H-2-817981. Sheet 1. Rev. 1*
            H-2-817981, Sheet 2, Rev. 1*
           H-2-817981, Sheet 2, Rev. 1*
H-2-817981, Sheet 3, Rev. 1*
H-2-817981, Sheet 4, Rev. 1*
H-2-817983, Sheet 1, Rev. 0*
H-2-817983, Sheet 2, Rev. 1*
H-2-817983, Sheet 3, Rev. 0*
H-2-817983, Sheet 4, Rev. 0*
            H-2-817983, Sheet 4, Rev. 1*
            H-2-817983, Sheet 5, Rev. 0*
            H-2-817983, Sheet 6, Rev. 1*
           H-2-817983, Sheet b, Rev. 1*
H-2-817983, Sheet 7, Rev. 0*
H-2-817983, Sheet 8, Rev. 0*
H-2-817985, Sheet 1, Rev. 1*
H-2-817987, Sheet 2, Rev. 1*
H-2-817987, Sheet 3, Rev. 1*
H-2-817987, Sheet 4, Rev. 1*
H-2-817988, Sheet 1, Rev. 1*
            H-2-817988. Sheet 1. Rev. 1*
           H-2-817988, Sheet 2, Rev. 1*
H-2-817988, Sheet 3, Rev. 1*
H-2-817989, Sheet 1, Rev. 1*
H-2-817990, Sheet 1, Rev. 1*
H-2-817991, Sheet 2, Rev. 1*
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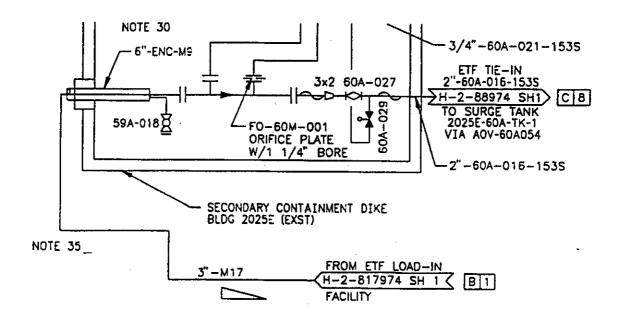
(\* Title and/or Essential/Support status is changed for these drawings per this ECN.)

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ECN 641703 Date 5/13/97

H-2-88766. Sheet 4. Rev. 2. Zone D-2

IS:

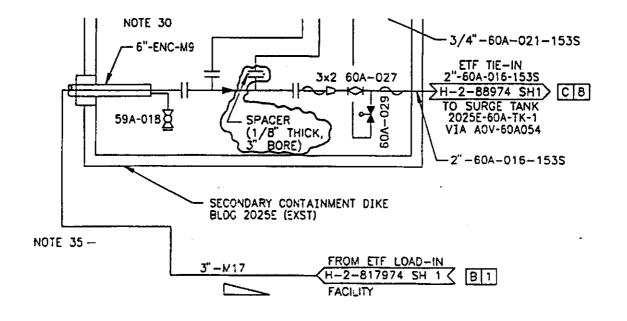


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ECN 641703 Date 5/13/97

H-2-88766. Sheet 4. Rev. 2. Zone D-2

**CHANGE TO:** 

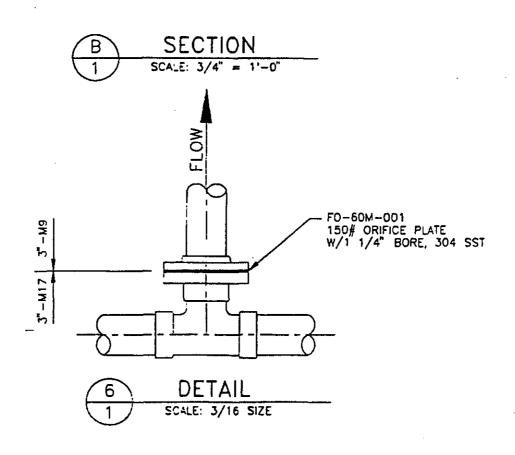


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ECN 641703 Dete 5/13/97

H-2-88779, Sheet 4, Rev. 0, Zone B-2

IS:

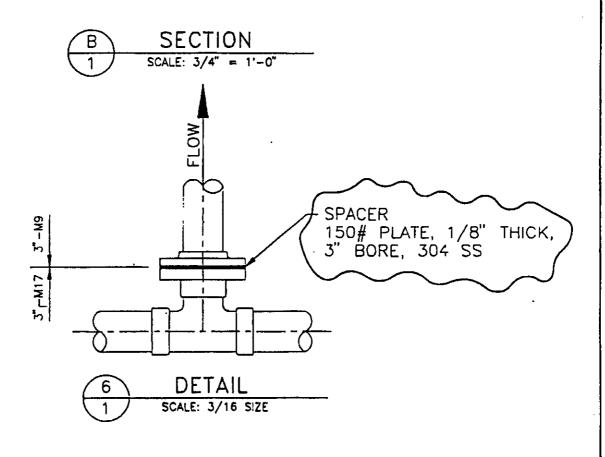


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ECM 641703 Date 5/13/97

H-2-88779. Sheet 4. Rev. 0. Zone B-2

**CHANGE TO:** 

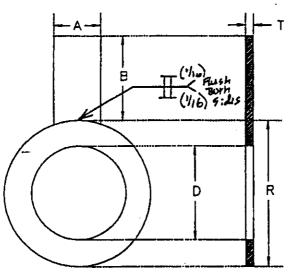


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ECN 641703 Date 5/13/97

Sketch for 3" spacer shown in above changes to H-2-88779 and H-2-88766

### 3" FLANGE SPACER FOR ECN 641703



T = 1/8" PLATE THICKNESS

A = 2" (APPROX) B = 3" (APPROX)

D = 3.00" +/- .05"R = 5.25" +/- .05"

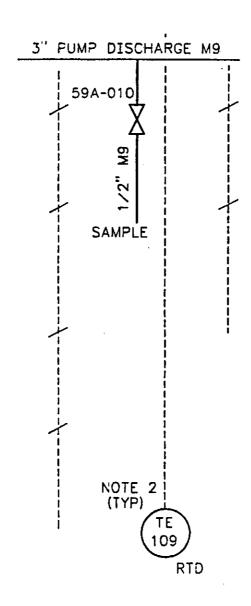
MATERIAL = 304SS FLANGE CLASS = 150 LB

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ECN 641703 Date 5/13/97

H-2-817974. Sheet 1. Rev. 2. Zone C-5

IS:

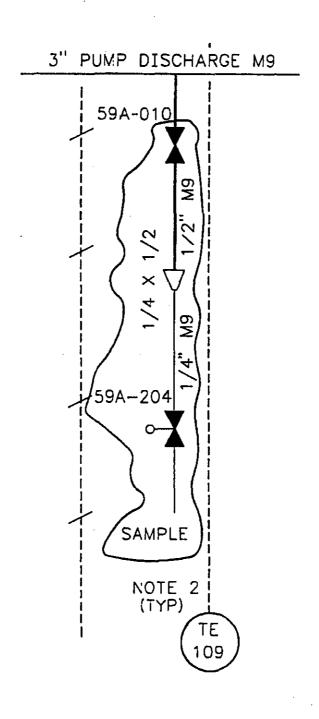


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ECH 641703 Date 5/13/97

H-2-817974. Sheet 1. Rev. 2. Zone C-5

**CHANGE TO:** 

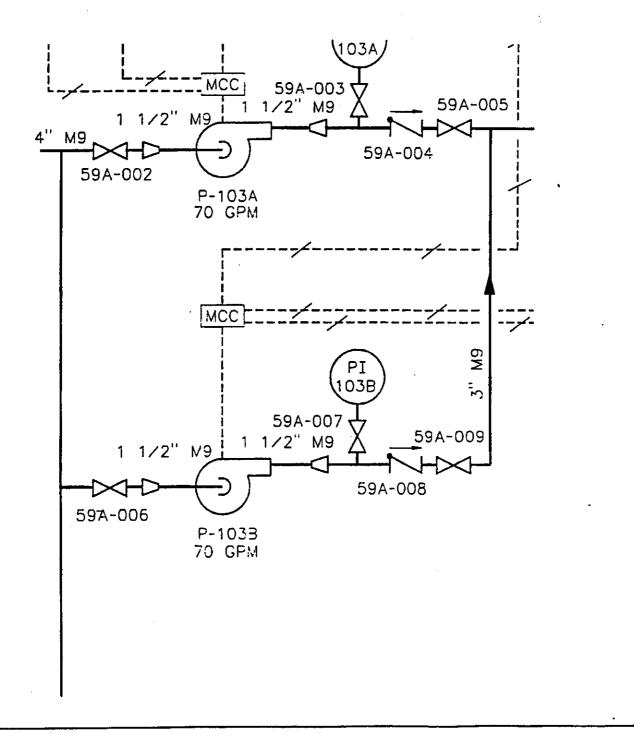


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ECN 641703 Date 5/13/97

H-2-817974. Sheet 1. Rev. 2. Zone C-7 to D-7

IS:

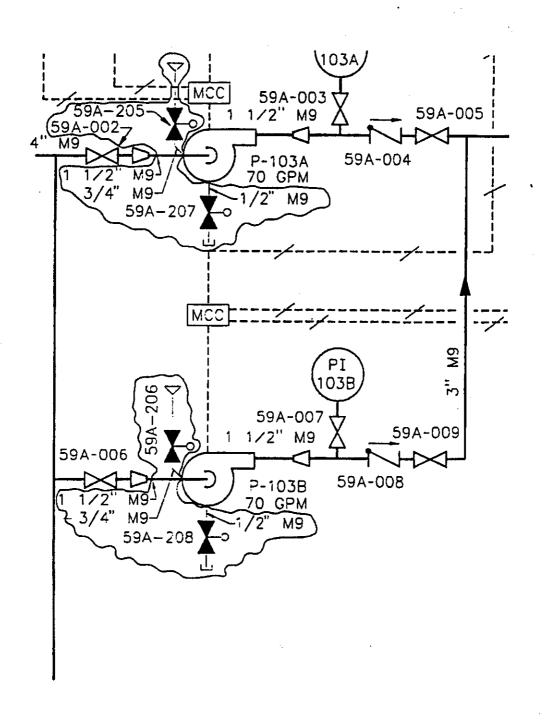


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ECN 641703 Date 5/13/97

H-2-817974. Sheet 1. Rev. 2. Zone C-7 to D-7

**CHANGE TO:** 

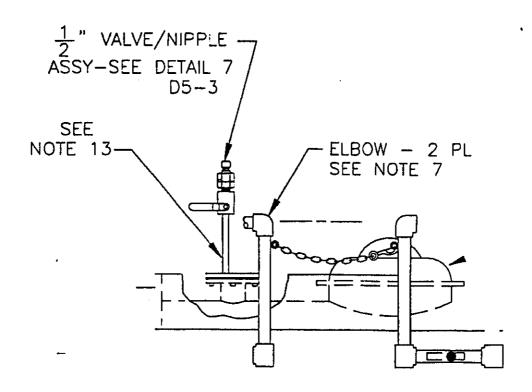


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ECN 641703 Data 5/13/97

H-9-203. Sheet 1. Rev. 0. Zone E-6

IS:

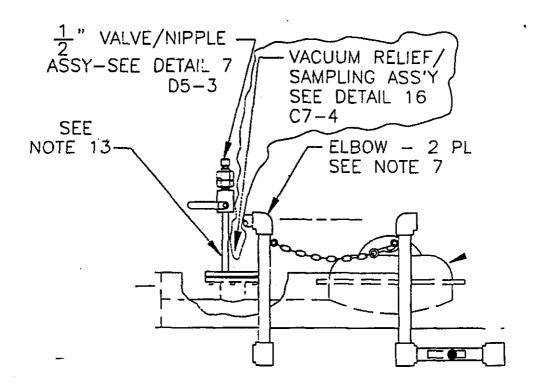


Page 14 of 24

ECN 641703 Date 5/13/97

H-9-203. Sheet 1. Rev. 0. Zone E-6

**CHANGE TO:** 

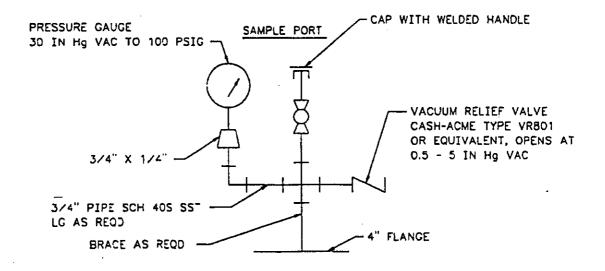


Page 15 of 24

ECN 641703 Date 5/13/97

H-9-203, Sheet 4, Rev. 0, Zone D-7.

IS:



DETAIL 16 C6-2

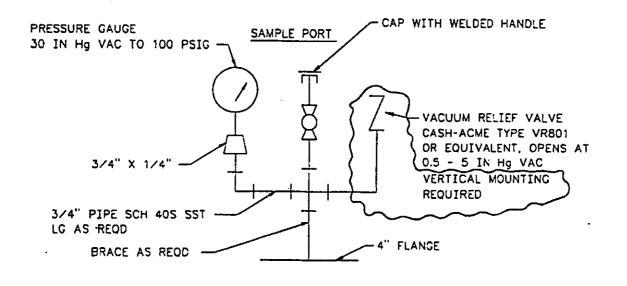
SCALE: NONE

Page 16 of 24

ECH 641703 Date 5/13/97

H-9-203. Sheet 4. Rev. 0. Zone D-7

**CHANGE TO:** 



DETAIL 16 C6-2 (E6-1)
SCALE: NONE

Page 1701 24

ECN 641703 Date 5/13/97

H-2-817968, Sheet 1, Rev. 1, Title

IS:

ETF TRUCK LOAD-IN FACILITY LOCATION PLAN & DWG LIST

CHANGE TO: ETF TRUCK LOAD-IN STATION LOCATION PLAN & DWG LIST

Drawing Status: ESSENTIAL

H-2-817969. Sheet 1. Rev. 1. Title

IS:

CIVIL ETF TRUCK LOAD-IN FACILITY SITE PLAN

CHANGE TO: CIVIL ETF TRUCK LOAD-IN STATION SITE PLAN

Drawing Status: SUPPORT

H-2-817969, Sheet 2, Rev. 1, Title

IS:

CIVIL ETF TRUCK LOAD-IN FACILITY PLAN AND PROFILES

CHANGE TO: CIVIL ETF TRUCK LOAD-IN STATION PLAN AND PROFILES

Drawing Status: SUPPORT

H-2-817969, Sheet 3, Rev. 1, Title

IS:

CIVIL ETF TRUCK LOAD-IN FACILITY ENLARGED PLAN

CHANGE TO: CIVIL ETF TRUCK LOAD-IN STATION ENLARGED PLAN

Drawing Status: SUPPORT

H-2-817969, Sheet 4, Rev. 1, Title

IS:

CIVIL ETF TRUCK LOAD-IN FACILITY MISCELLANEOUS DETAILS

CHANGE TO: CIVIL ETF TRUCK LOAD-IN STATION MISCELLANEOUS DETAILS

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ECN 641703 Date 5/13/97

H-2-817969. Sheet 5. Rev. 1. Title

IS:

CIVIL ETF TRUCK LOAD-IN FACILITY MISCELLANEOUS DETAILS

CHANGE TO: CIVIL ETF TRUCK LOAD-IN STATION MISCELLANEOUS DETAILS

Drawing Status: SUPPORT

H-2-817970. Sheet 1, Rev. 1, Title

IS:

STRUCTURAL ETF TRUCK LOAD-IN FACILITY PLAN AND SECTIONS

CHANGE TO: STRUCTURAL ETF TRUCK LOAD-IN STATION PLAN AND SECTIONS

Drawing Status: SUPPORT

H-2-817970. Sheet 2. Rev. 1. Title

IS:

STRUCTURAL ETF TRUCK LOAD-IN FACILITY SECTIONS AND DETAILS

CHANGE TO: STRUCTURAL ETF TRUCK LOAD-IN STATION SECTIONS AND DETAILS

Drawing Status: SUPPORT

H-2-817971. Sheet 1. Rev. 1. Title

IS:

STRUCTURAL ETF TRUCK LOAD-IN FACILITY STEEL PLAN & SECTIONS

CHANGE TO: STRUCTURAL ETF TRUCK LOAD-IN STATION STEEL PLAN & SECTIONS

Drawing Status: SUPPORT

H-2-817971. Sheet 2. Rev. 1. Title

IS:

STRUCTURAL ETF TRUCK LOAD-IN FACILITY STEEL DETAILS

CHANGE TO: STRUCTURAL ETF TRUCK LOAD-IN STATION STEEL DETAILS

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ECN 641703

Date 5/13/97

H-2-817972. Sheet 1. Rev. 1. Title

IS:

STRUCTURAL ETF TRUCK LOAD-IN FACILITY SECTIONS AND DETAILS

CHANGE TO: STRUCTURAL ETF TRUCK LOAD-IN STATION SECTIONS AND DETAILS

Drawing Status: SUPPORT

H-2-817973, Sheet 1, Rev. 1, Title

IS:

STRUCTURAL ETF TRUCK LOAD-IN FACILITY MISC SECTIONS AND DETAILS

CHANGE TO: STRUCTURAL ETF TRUCK LOAD-IN STATION MISC SECTIONS AND DETAILS

Drawing Status: SUPPORT

H-2-817974, Sheet 1, Rev. 2, Title

IS:

P & ID ETF TRUCK LOAD-IN FACILITY

CHANGE TO: P & ID ETF TRUCK LOAD-IN STATION

Drawing Status: ESSENTIAL

H-2-817975, Sheet 1, Rev. 1, Title

IS:

PIPING ETF TRUCK LOAD-IN FACILITY PLAN

CHANGE TO: PIPING ETF TRUCK LOAD-IN STATION PLAN

Drawing Status: ESSENTIAL

H-2-817976, Sheet 1, Rev. 1, Title

IS:

PIPING ETF TRUCK LOAD-IN FACILITY SECTIONS AND DETAILS

CHANGE TO: PIPING ETF TRUCK LOAD-IN STATION SECTIONS AND DETAILS

Page 20 of 21

ECH 641703 Date 5/13/97

H-2-817977. Sheet 1. Rev. 1. Title

IS:

PIPING ETF TRUCK LOAD-IN FACILITY DETAILS

CHANGE TO: PIPING ETF TRUCK LOAD-IN STATION DETAILS

Drawing Status: SUPPORT

H-2-817978, Sheet 1, Rev. 1, Title

IS:

PIPING ETF TRUCK LOAD-IN FACILITY PIPE SUPPORTS

CHANGE TO: PIPING ETF TRUCK LOAD-IN STATION PIPE SUPPORTS

Drawing Status: SUPPORT

H-2-817980. Sheet 1. Rev. 1. Title

IS:

INSTRUMENTATION ETF TRUCK LOAD-IN FACILITY LEGEND & SYMBOLS

CHANGE TO: INSTRUMENTATION ETF TRUCK LOAD-IN STATION LEGEND & SYMBOLS

Drawing Status: SUPPORT

H-2-817981, Sheet 1, Rev. 1, Title

IS:

INSTRUMENTATION ETF TRUCK LOAD-IN FACILITY LOOP DIAGRAM

CHANGE TO: INSTRUMENTATION ETF TRUCK LOAD-IN STATION LOOP DIAGRAM

Drawing Status: SUPPORT

H-2-817981, Sheet 2, Rev. 1, Title

IS:

INSTRUMENTATION ETF TRUCK LOAD-IN FACILITY LOOP DIAGRAM

CHANGE TO: INSTRUMENTATION ETF TRUCK LOAD-IN STATION LOOP DIAGRAM

Page of 24

ECN 641703 Date 5/13/97

H-2-817981, Sheet 3, Rev. 1, Title

IS:

INSTRUMENTATION ETF TRUCK LOAD-IN FACILITY LOOP DIAGRAM

CHANGE TO: INSTRUMENTATION ETF TRUCK LOAD-IN STATION LOOP DIAGRAM

Drawing Status: SUPPORT

H-2-817981, Sheet 4, Rev. 1, Title

IS:

INSTRUMENTATION ETF TRUCK LOAD-IN FACILITY LOOP DIAGRAM

CHANGE TO: INSTRUMENTATION ETF TRUCK LOAD-IN STATION LOOP DIAGRAM

Drawing Status: SUPPORT

H-2-817981. Sheet 5. Rev. 1. Title

IS:

INSTRUMENTATION ETF TRUCK LOAD-IN FACILITY LOOP DIAGRAM

CHANGE TO: INSTRUMENTATION ETF TRUCK LOAD-IN STATION LOOP DIAGRAM

Drawing Status: SUPPORT

H-2-817983. Sheet 1. Rev. 0. Title

CHANGE TO: Drawing Status: SUPPORT

H-2-817983, Sheet 2, Rev. 1, Title

CHANGE TO: Drawing Status: SUPPORT

H-2-817983, Sheet 3, Rev. 0, Title

CHANGE TO: Drawing Status: SUPPORT

H-2-817983, Sheet 4, Rev. 1, Title

CHANGE TO: Drawing Status: SUPPORT

H-2-817983, Sheet 5, Rev. 0, Title

CHANGE TO: Drawing Status: SUPPORT

Page Dof DI

ECN 641703 Date 5/13/97

H-2-817983. Sheet 6. Rev. 1. Title

CHANGE TO: Drawing Status: SUPPORT

H-2-817983. Sheet 7. Rev. 0. Title

CHANGE TO: Drawing Status: SUPPORT

H-2-817983. Sheet 8. Rev. 0. Title

CHANGE TO: Drawing Status: SUPPORT

H-2-817985, Sheet 1, Rev. 1, Title

IS:

INSTRUMENTATION ETF TRUCK LOAD-IN FACILITY SECTIONS AND DETAILS

CHANGE TO: INSTRUMENTATION ETF TRUCK LOAD-IN STATION SECTIONS AND DETAILS

Drawing Status: SUPPORT

H-2-817985. Sheet 2. Rev. 1. Title

IS:

INSTRUMENTATION ETF TRUCK LOAD-IN FACILITY SECTIONS AND DETAILS

CHANGE TO: INSTRUMENTATION ETF TRUCK LOAD-IN STATION SECTIONS AND DETAILS

Drawing Status: SUPPORT

H-2-817987, Sheet 1, Rev. 1, Title

IS:

ELECTRICAL ETF TRUCK LOAD-IN FACILITY SITE PLAN

CHANGE TO: ELECTRICAL ETF TRUCK LOAD-IN STATION SITE PLAN

Drawing Status: SUPPORT

H-2-817987, Sheet 3, Rev. 1, Title

IS:

ELECTRICAL ETF TRUCK LOAD-IN FACILITY SECTIONS & DETAILS

CHANGE TO: ELECTRICAL ETF TRUCK LOAD-IN STATION SECTIONS & DETAILS

Page 23 of 2.4

ECN 641703 Date 5/13/97

H-2-817987. Sheet 4. Rev. 1. Title

IS:

ELECTRICAL ETF TRUCK LOAD-IN FACILITY SECTIONS & DETAILS

CHANGE TO: ELECTRICAL ETF TRUCK LOAD-IN STATION SECTIONS & DETAILS

Drawing Status: SUPPORT

H-2-817988. Sheet 1. Rev. 1. Title

IS:

ELECTRICAL ETF TRUCK LOAD-IN FACILITY PLAN, ONE-LINE & DETAILS

CHANGE TO: ELECTRICAL ETF TRUCK LOAD-IN STATION PLAN, ONE-LINE & DETAILS

Drawing Status: ESSENTIAL

H-2-817988, Sheet 2, Rev. 1, Title

IS:

ELECTRICAL ETF TRUCK LOAD-IN FACILITY PLAN. GND & HEAT TRACING

CHANGE TO: ELECTRICAL ETF TRUCK LOAD-IN STATION PLAN, GND & HEAT TRACING

Drawing Status: ESSENTIAL

H-2-817988, Sheet 3, Rev. 1, Title

IS:

ELECTRICAL ETF TRUCK LOAD-IN FACILITY PANEL SCHEDULE & DETAILS

CHANGE TO: ELECTRICAL ETF TRUCK LOAD-IN STATION PANEL SCHEDULE & DETAILS

Drawing Status: ESSENTIAL

H-2-817989. Sheet 1. Rev. 1. Title

IS:

ELECTRICAL ETF TRUCK LOAD-IN FACILITY ELEMENTARY DIAGRAM

CHANGE TO: ELECTRICAL ETF TRUCK LOAD-IN STATION ELEMENTARY DIAGRAM

Drawing Status: ESSENTIAL

Page 24 of 24

ECH 641703 Date 5/13/97

H-2-817990. Sheet 1. Rev. 1. Title

IS:

ELECTRICAL ETF TRUCK LOAD-IN FACILITY WIRE & CONDUIT SCHEDULE

CHANGE TO: ELECTRICAL ETF TRUCK LOAD-IN STATION WIRE & CONDUIT SCHEDULE

Drawing Status: ESSENTIAL

H-2-817991, Sheet 2, Rev. 1, Title

IS:

ELECTRICAL ETF TRUCK LOAD-IN FACILITY TELECOMMUNICATIONS

CHANGE TO: ELECTRICAL ETF TRUCK LOAD-IN STATION TELECOMMUNICATIONS

0,0

#### **ENGINEERING CHANGE NOTICE**

Page 1 of 10

1. ECN 647247

10 PO

2 ECN Category (mark one)  Supplemental [X] Direct Revision [] Change ECN [] Temporary [] Standby [] Supersedure [] Cancel/Void []	(3)	Originator's Name, Or and Telephone No.     RN Wagner/32230/	4. USQ Required?  [] Yes [X] No  7. Bldg/Sys/Fec No. 2025EC/59A/ 200 Area ETF  10. Related ECN No(s).  NA		5. Date August 27, 1998	
	0000	6. Project Title/No./Work Install Tent Over ET			Approval Designator     NA	
	ö	Document Numbers C (includes sheet no. and See			11. Related PO No.	
12a. Modification Work  [X] Yes (fill out Blk. 12b)		12b. Work Package No. EL-97-00853	12c Modification Work Compl	lete 12d. Restored to Original Condition (Temp. or Standby ECN only)  N/A		or Standby ECN only)
[] No (NA Biks. 12b, 12c, 12d)			Design Authority/Cog. Signature & Dat		Desi	gn Authority/Cog. Engineer Signature & Date

13a. Description of Change

13b. Design Baseline Document? [x] Yes [] No

This ECN installs a tent over the ETF Load-In Station to provide shelter during inclement weather. Mechanical modifications to the Load-In Station necessary to accommodate the tent placement are covered in this ECN.

#### Drawings affected are:

- H-2-817970 Sheet 1, Rev. 1
- H-2-817972 Sheet 1, Rev. 1
- / H-2-817975 Sheet 1, Rev. 5
- . H-2-817976 Sheet 1, Rev. 1

Concrete anchor bolts for relocation of the Load-In transfer line support frame shall be Hilti P/N 0045407, Description Code KB II SS 58-812 Ext Trd, or Engineering approved equivalent. Piping, fittings, and jointing methods shall meet the requirements of Piping Specification Class M-9. Install, inspect, and test the new piping installation in accordance with ASME B31.3 and Addenda for Category D fluid service.

#### (Block 13a continued on Page 3)

14a. Justificati	on (mark one)						
Criteria Chang	se []	Design Improvement	[X]	Environmental	0	Facility Deactivation	0
As-Found	0	Facilitate Const	[]	Const. Error/Omission	<u> []</u>	Design Error/Omission	[]

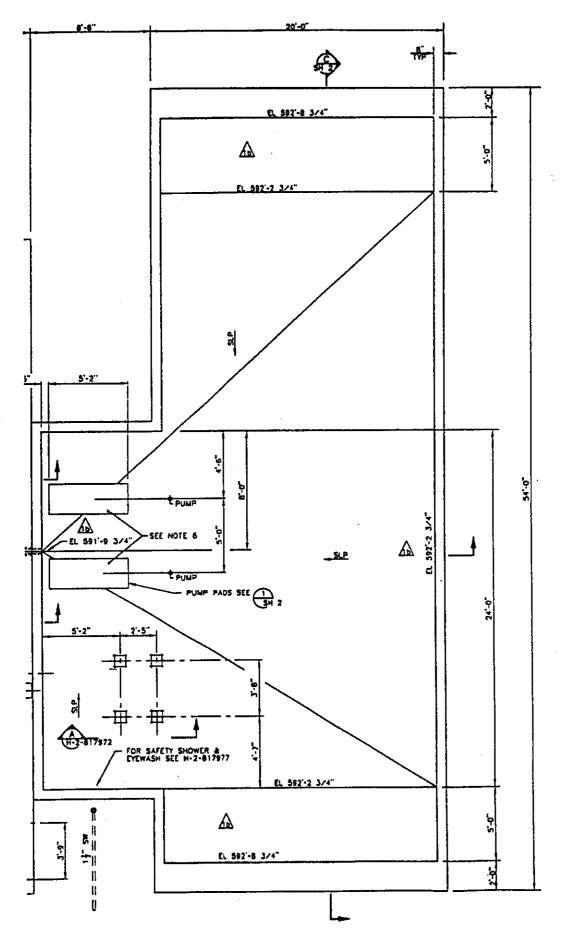
14h. Justification Details

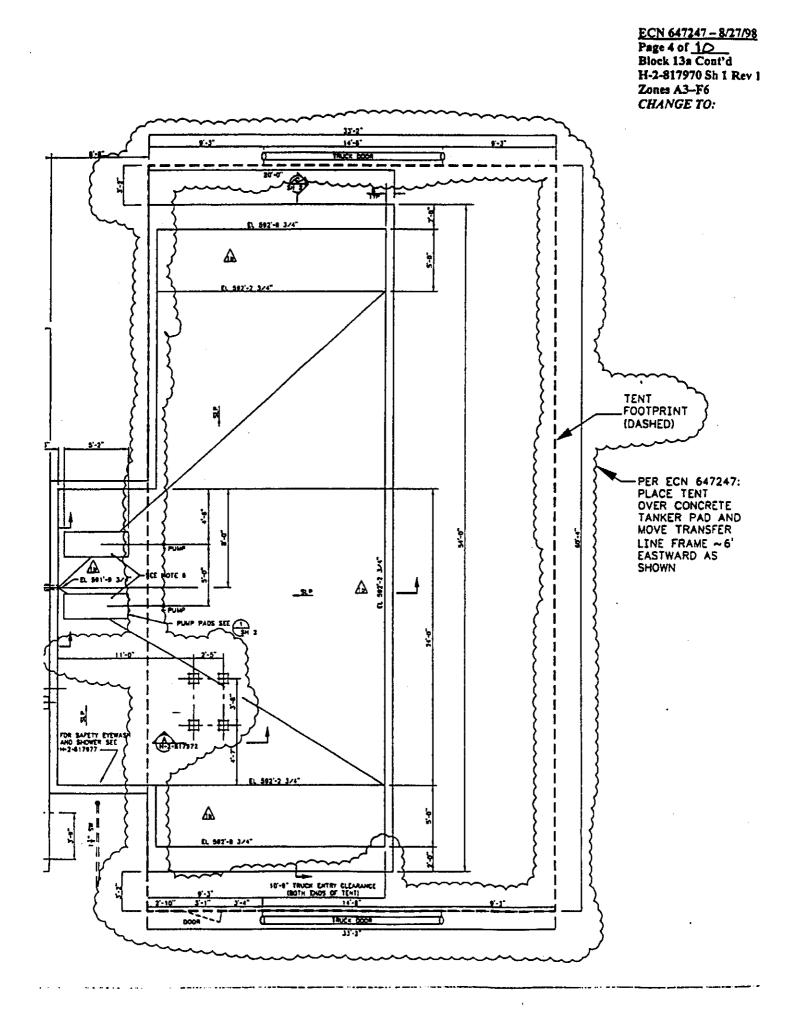
The tent will provide shelter to ensure operator safety and allow continuity of operations during inclement weather.

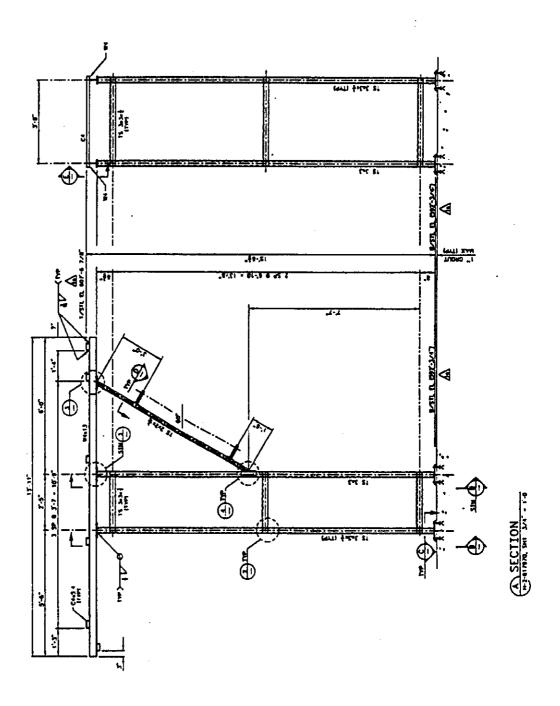
		*	
15. Distribution (include name, MS	N, and no. of copies)		RECEASE STAIN!
N. J. Sultivan S6-72 1 A. K. Yoakum S6-71 1 R. N. Wagner* S6-72 2 WCC Planning S6-71* 1 L. L. Lin S6-72 3 D. L. Flyckt S6-71 1 (* = 1 Advance Copy)	J. E. Geary E. A. McNamar M. W. Bowman T. W. Dallas D. L. Tubbs C. M. Towne  TPF 7  TBF 4	S6-71   S6-72   S6-72   S6-72   S6-74   S6-74	DATE: HANFORD ED: SEP 0 8 1998

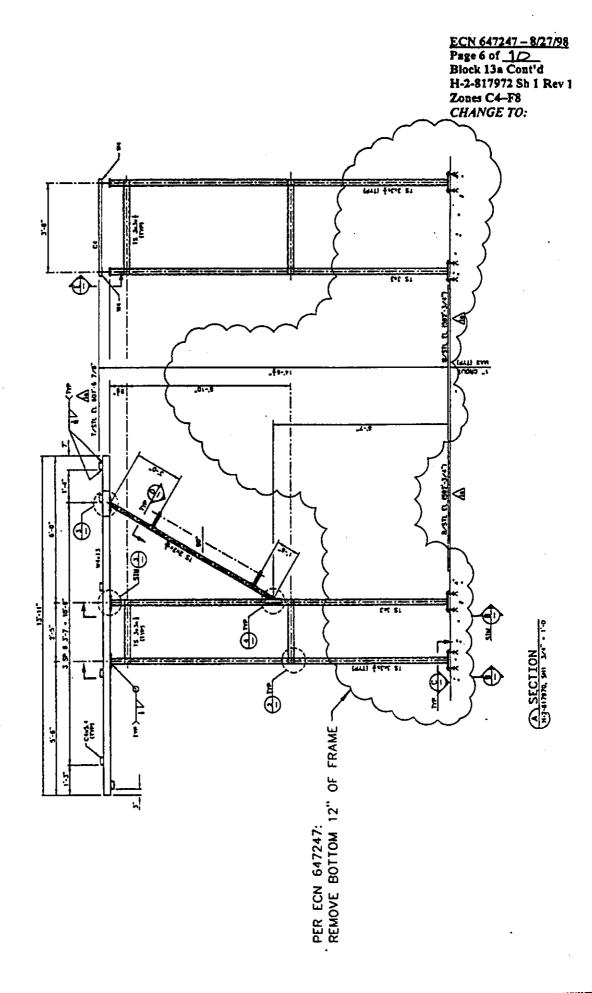
Ε	NGINEERING CHA	NGE NOTICE	Page 2 of 1 O	1. ECN (use no 647247	. from pg. 1)			
16. Design Verification	17 Cost Impact — ENGINEERI	→ NA <	CONSTRUCTION	UCTION 18 Schedule Impact (days) NA <				
Required	Additional (	S Additional	[] \$	Improvement	a ·			
[X] Yes	Savings (	S Savings	0 \$	Delay	o l			
19. Change Impact Review	<ul> <li>Indicate the related documents the change described in Block</li> </ul>	nents (other than the engineering of 13. Enter the affected document	locuments identified on Side 1) It number in Block 26					
SD0/00	[NA]	Seieme/Stress Analysia	[NA]	Tank Calibration Munual	[NA]			
Functional Design Criteria	[NA]	Street/Design Report	[NA]	Health Physics Procedure	[NA]			
Operating Specification	[NA]	Interface Control Drawing	[NA]	Spares Multiple Unit Listing	[NA]			
Criticality Specification	[NA]	Calibration Procedure	[NA]	Test Procedures/Specification	[NA]			
Conceptual Design Report	[NA]	Jaulation Procedure	[NA]	Component Index	[NA]			
Equipment Spec	[NA]	Maintenance Procedure	[NA]	ASME Coded kem	[NA]			
Coast Spec	[NA]	Engineering Procedure	[NA]	Human Factor Consideration	[NA]			
Procurement Spec.	[AN]	Operating Instruction	[NA]	Computer Software	[NA]			
Vendor information	[NA]	Operating Procedure	[NA]	Electric Carnit Schodule	[NA]			
Ohi Sisanal		Operational Safety Requirement	[NA]	ICRS Procedure	[NA]			
FSAR/SAR	[NA]	IEFD Drawing		Process Control Manuel/Pisa	[NA]			
Safety Equipment List	[NA]	Call Arrangement Drawing	[NA]	Process Flow Chart				
Radiation Work Permit	[NA]	Essential Material Specification	[NA]	Purchase Repusition	[NA]			
Environmental Impact Statement	[NA]	Fac Proc Samp, Schedule	[NA]	Tickles Fde	[NA]			
1	[NA]	Inspection Plan	[NA]	[New 146	[NA]			
Environmental Report	[NA]		[NA]		[]			
Environmental Permit	[NA]	Investory Adjustment Request	[NA]		I)			
indicate that the signing Document No	g organization has been notif imber/Revision uments are affected by	listed below will not be revised by led of other affected documents lin Document Number	sted below.	Document Number R	evision			
71 Approvels  Design Authority - R. N. Cog. Eng R. N. Wagno Cog. Mgr N. J. Sullivar (Informal Design Revi	· Sall	Date 921/49 1/24/49 9-8-98	Sign Design Agent – R. N. Wa PE QA	sature gner Sell	Y)27/50			
QA Safety Environ. Other Operations - J. E. Geary.	Jan Estery		Safety Design Environ Other		•			
	J		DEPARTMENT OF ENII Signature or a Control No Approval Signature		<del>-</del>			
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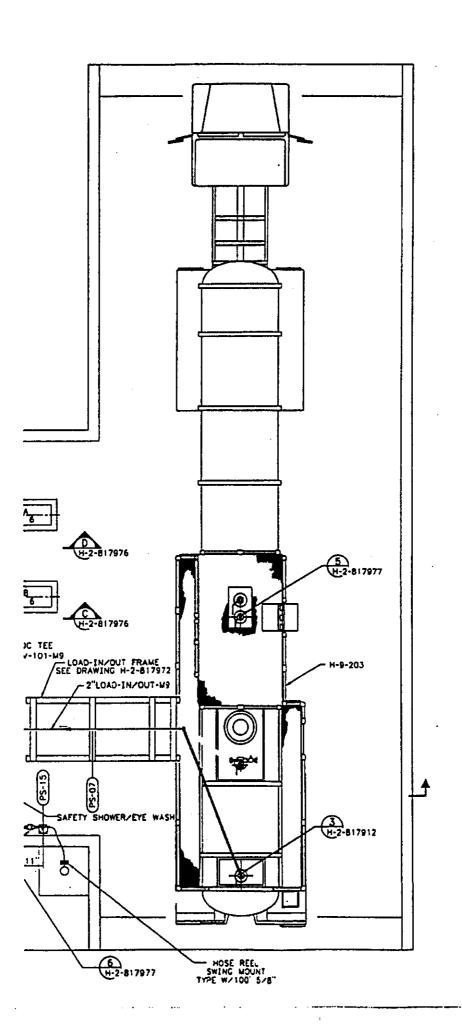
ECN 647247 - 8/27/98
Page 3 of 10
Block 13a Cont'd
H-2-817970 Sh 1 Rev 1
Zones A3-F6
IS NOW:



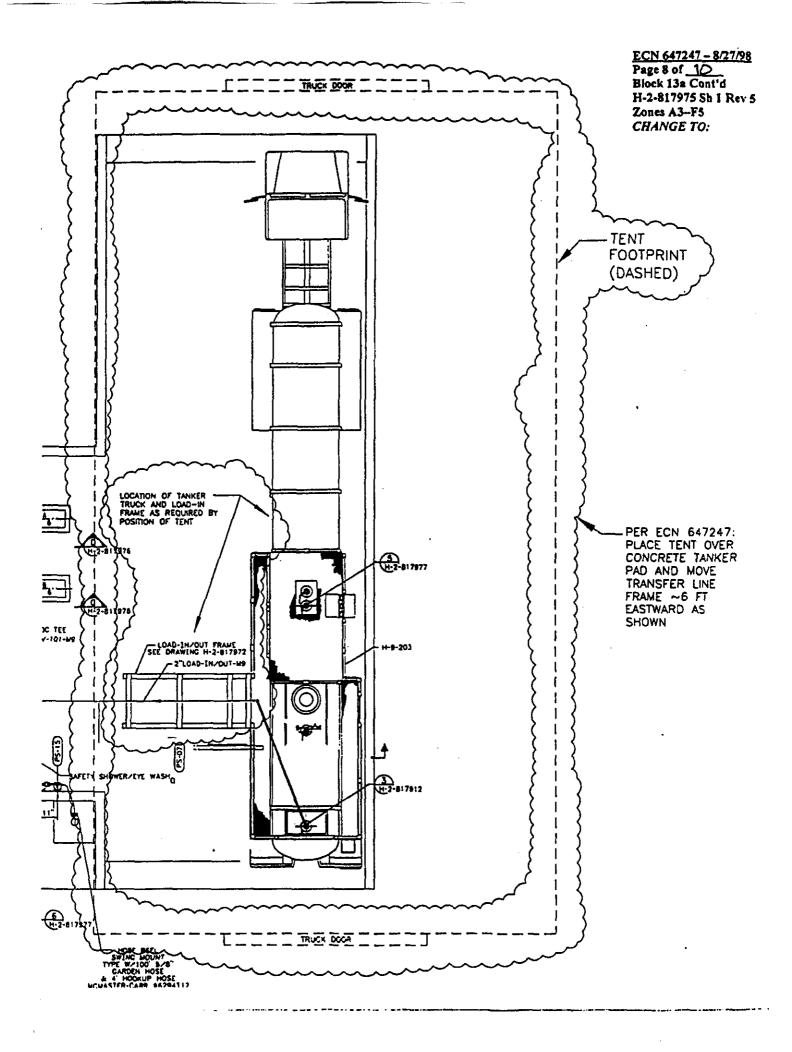


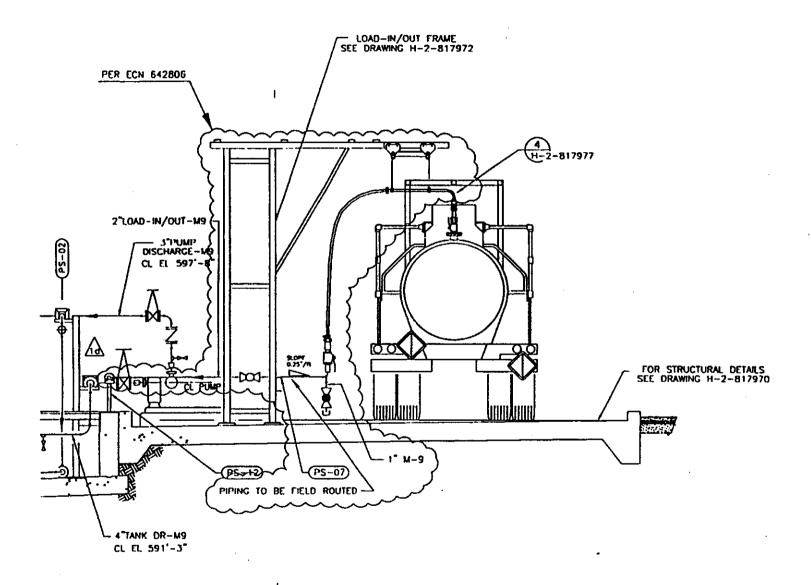




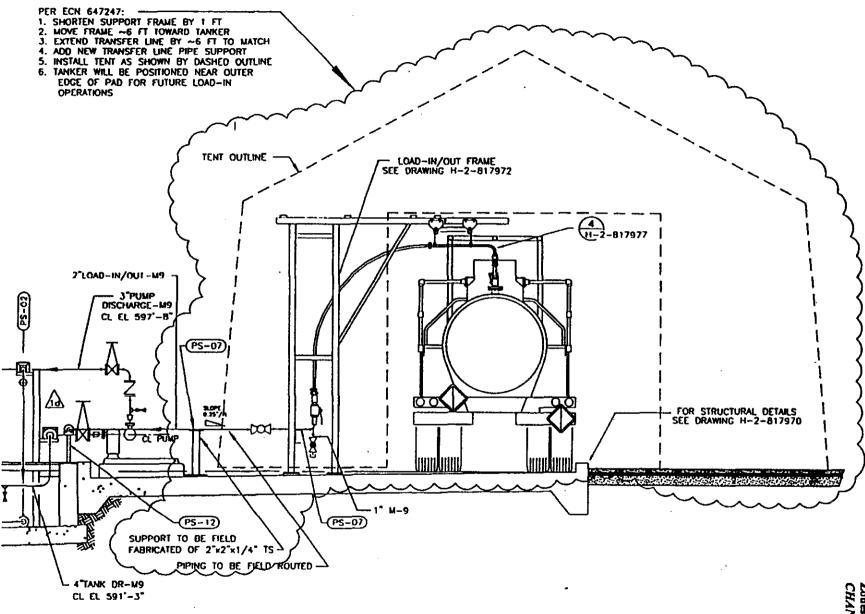


ECN 647247 - 8/27/98
Page 7 of 10
Block 13a Cont'd
H-2-817975 Sh 1 Rev 5
Zones A3-F5
IS NOW:





B SECTION H-2-817975 SCALE: 3/8"=1"-0" Page 9 of 1/2 Block 13a Cont'd H-2-817976 Sh 1 Rev 1



B SECTION H-2-817975 SCALE: 3/8"=1"-0" Page 10 of 102 Block 13a Cont'd H-2-817976 Sh 1 Rev 1 Zones A4-D6 , ps it

#### **ENGINEERING CHANGE NOTICE**

Page 1 of \_S

1. ECN 649104 Proj.

12b. Work Package No. EL-99-00071/M	Order No /CACN nanged by rev.) Block 1:	106883 COA this ECN	10. Related E 64 64	/Fac. No. /59A/ETF ECN No(s). 17275 8786 12d. Restored tion (Temp. o	8. Approval De N/ 11. Related PO N/ 1 to Original Cond or Standby ECN or N/A	/A No. /A i- i-
6. Project Title/No/Work Truck Load-in Filter/ EK00  9. Document Numbers Ch (includes sheet no. and to See 1  12b. Work Package No. EL-99-00071/M	Order No /CACN nanged by rev.) Block 1:	this ECN  3a  odification Work Comple	7. Bldg/Sys. 2025E 10. Related E 64 64	/Fac. No. /59A/ETF ECN No(s). 17275 8786 12d. Restored tion (Temp. o	11. Related PO Note to Original Condor Standby ECN or N/A	/A No. /A i- i-
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Design Improvement	[]	Environmental	()	•	<i>*</i>	[]
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t 1	H-2-817970  et for description of nee with the requirer  Design Improvement Facilitate Const.  ration capability is rements.	H-2-817970, Sh 2, If the for description of changes not with the requirements of Design Improvement []  Facilitate Const []	Design Improvement [] Environmental Facilitate Const. [] Const. Error/Omiss ration capability is required to simultaneously accoments.	H-2-817970, Sh 2, Rev 1  tet for description of changes.  Ince with the requirements of construction specification W-2!  Design Improvement [] Environmental []  Facilitate Const. [] Const. Error/Omission []  ration capability is required to simultaneously accept liquid ments.	H-2-817970, Sh 2, Rev 1  Let for description of changes.  EXPIRES  Ince with the requirements of construction specification W-291H-CZ.  Design Improvement [] Environmental [] Facility  Facilitate Const. [] Const. Error/Omission [] Design ration capability is required to simultaneously accept liquid wastes contain ments.	H-2-817970, Sh 2, Rev 1  Design Improvement [] Environmental [] Facility Deactivation  Facilitate Const. [] Const. Error/Omission [] Design Error/Omission  ration capability is required to simultaneously accept liquid wastes containing solids while ments.

WCC Planning S6-71 (1)\*

T3-07 (1) (\* = 1 Advance Copy)

MW Bowman S6-72 (1)

BS Darling

AF Crane

DL Flyckt

JM Isdell

15. Distribution (include name, MSIN, and no. of copies)

T4-05 (1)

S6-72 (1)\*

S6-72 (1)

B4-39 (1)\*

EA McNamar S6-72 (1)

T4-05 (1)

\$6-71 (1)

S6-72 (1)

DB Powell

CD Skogley

DK Smith

NJ Sullivan

1D: 18

MANFORD

RELEASE

DATE

STA: 30

E	NGINEERING C	HAN	GE NO	TICE	Page 2 of 8	1. ECN 649104	
6. Design Verification Required	17. Cost Impact —— ENGINE			> NA <c< th=""><th>ONSTRUCTION</th><th>18. Schedule Impact (day</th><th>-</th></c<>	ONSTRUCTION	18. Schedule Impact (day	-
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[] No	Savings	Ü	\$	Sevings	[] \$	Delay	0
that will be affected by			k 13. En	iter the affected docum	g documents identified on ent number in Block 20.	·	
סססס	[AM]		Seisn	nic/Stress Analysis	[NA]	Tank Calibration Manual	[NA]
vactional Design Criteria	[NA]		Sven	s/Design Report	[NA]	Health Physics Procedure	[NA]
perating Specification	[NA]		Interi	tee Control Drawing	[NA]	Spares Multiple Unit Listing	[NA]
riticality Specification	[NA]		Calib	ration Procedure	[NA]	Test Procedures/Specification	[AN]
onceptust Design Report	[NA]		Enstal	lation Procedure	[NA]	Component Index	[NA]
quipment Spec.	[NA]		Maio	senance Procedure	[NA]	ASME Coded Item	[NA]
onst Spec.	[NA]		Engir	receing Procedure	[NA]	Human Factor Consideration	[NA]
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endor Information	[X]		Oper	nung Procedure	[NA]	Electric Circuit Schedule	[NA]
M Manual	[NA]		Oper	stional Safety Requirement	[NA]	ICRS Procedure	[NA]
SAR/SAR	[NA]		15FD	Drawing	[NA]	Process Control Manual/Plan	[NA]
afety Equipment List	[NA]		Cell /	Arrangement Drawing	[NA]	Process Flow Chart	[NA]
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EA McNamar E. A. nformal Design Review	m. Name			2/16/4			· · · · · · · · · · · · · · · · · · ·
					DEPARTMENT OF		
					Signature or a Contra Approval Signature	ol Number that tracks the	
					··· •		
					ADDITIONAL		

ECN 649104

Page 3 of 8

Date 2/16/99

H-2-817969, Sh 1, Rev 1

Zone D-3: Add asphalt and concrete pad areas.

H-2-817969, Sh 2 Rev 1

Zone E-3: Add asphalt and concrete pad areas.

H-2-817969, Sh 3 Rev 1

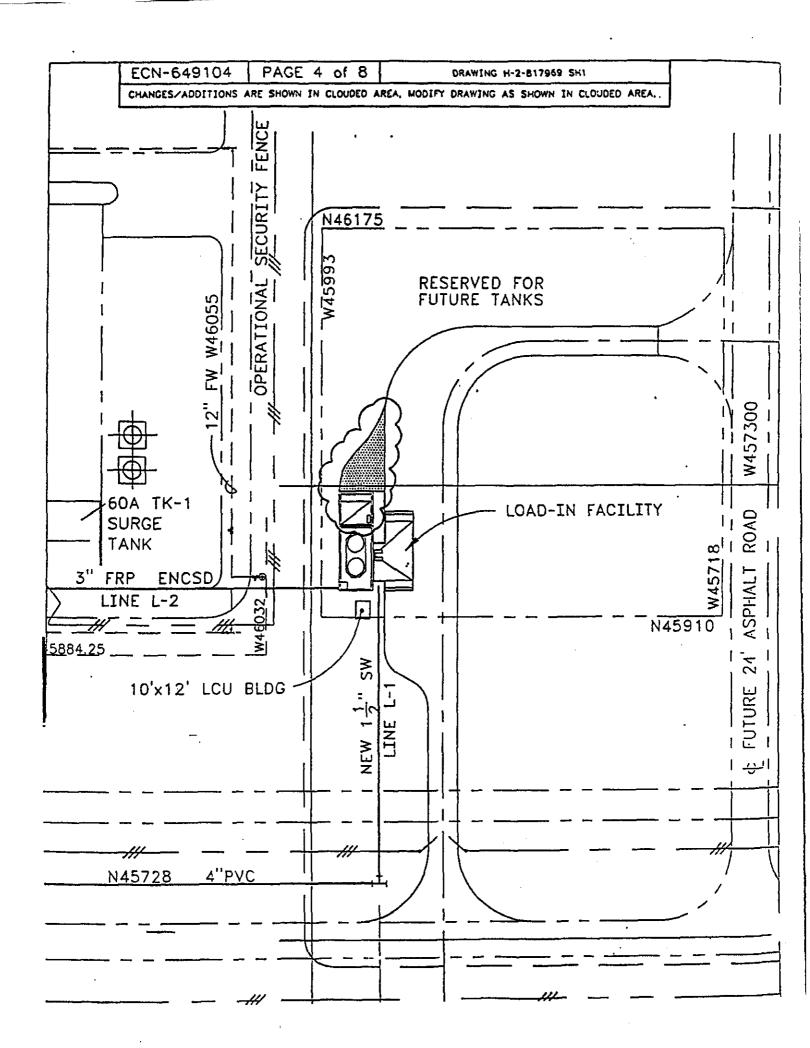
Zone D-7: Add asphalt and concrete pad areas, and elevations.

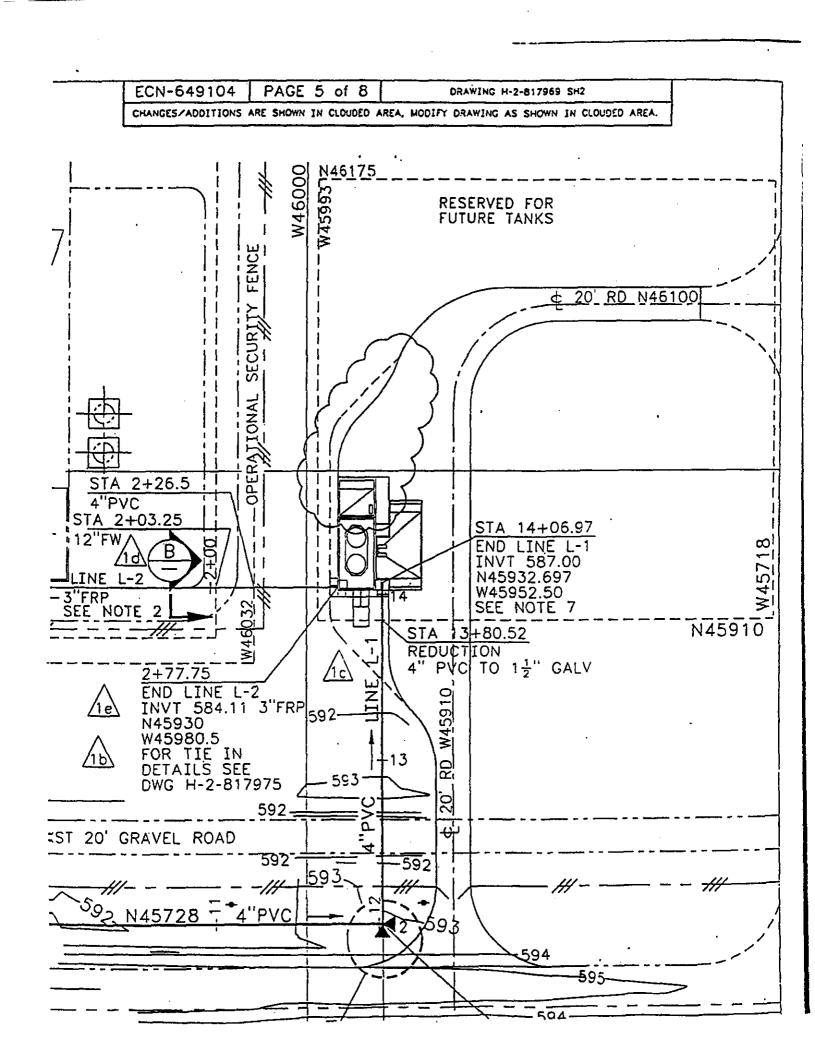
H-2-817970, Sh 1 Rev 1

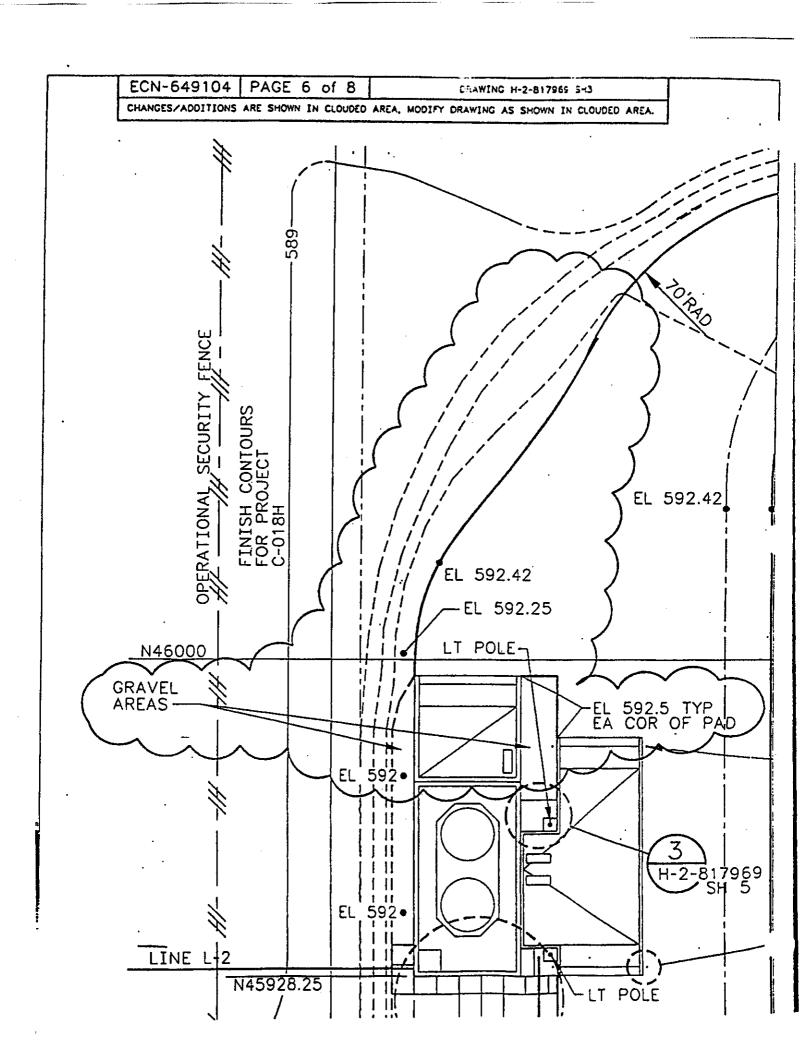
Zones C/F-5/8: Add asphalt and concrete pad areas, filter skid, pump base, dimensional details and Section G reference.

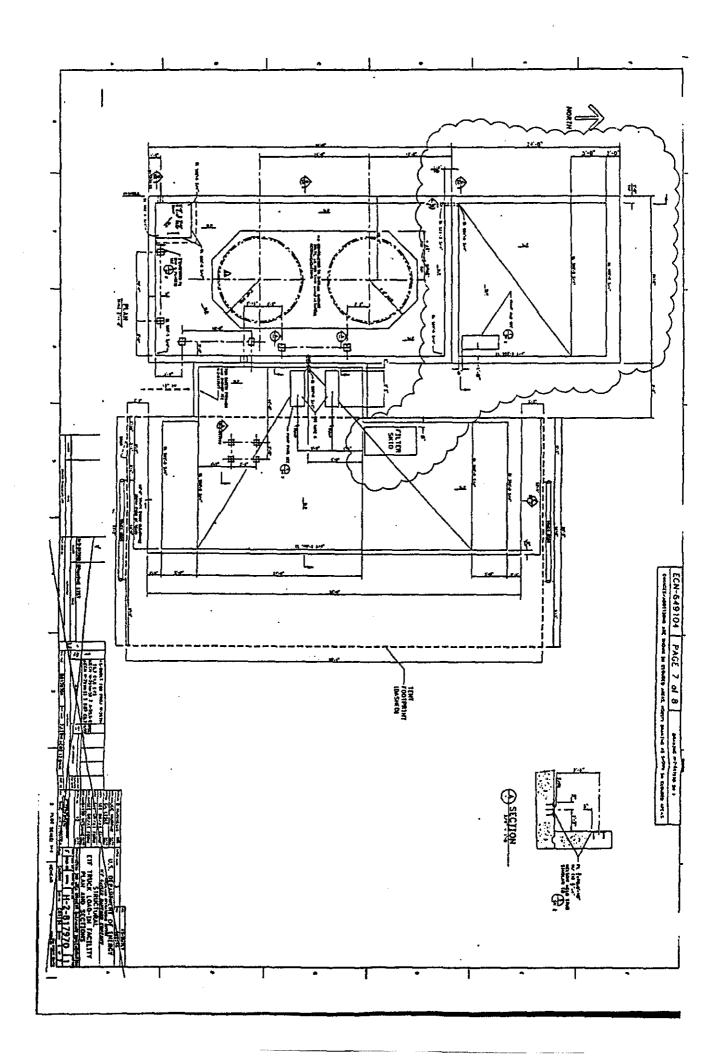
H-2-817970, Sh 2 Rev 1

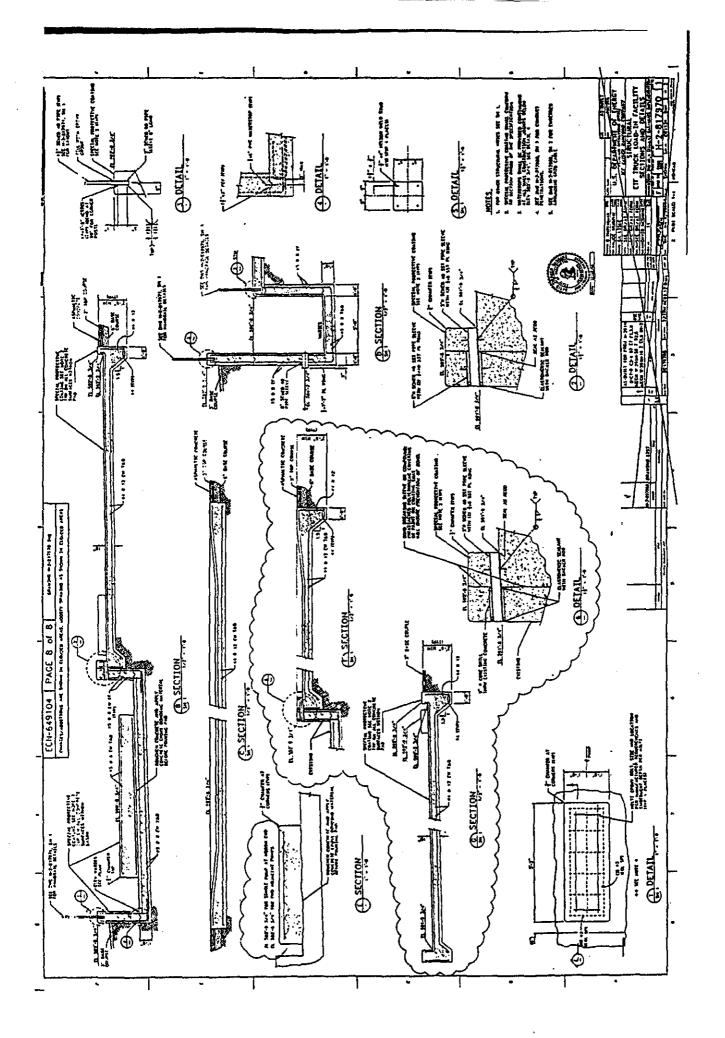
Zones A/D-4/8: Add Sections F and G and Detail 6. Add note to Section E identifying elevations of respective pump pads.











## ENGINEERING CHANGE NOTICE

# ESSENTIA 1. ECN 644244

					<del></del>	
2. ECN Calegory (mark one)	3. Originator's Name, O and Telephone No.	rganization, MSIN,	4. USQ Requi	lred?	5. Date	
Supplemental M	' '	200, 86-72, 373-3465	[ ] Yes [ ]!	No	11-20-98	
Direct Revision DR	6. Project Title/No./Work	Order No.	o. 7. Bldg./Sys./Fac. N		8. Approval Designa	tor
Change ECN 2/1448 [] Temporary	CHEMICAL FEED	PUMP RELOCATION	202	25E	NA NA	
Standby [ ]	9. Document Numbers (		10, Related ECN No(s).		11. Related PO No.	
Supersedure [ ] Cancel/Void [ ]	(includes sheet no. an	d rev.) LOCK 13a	644 644	1754 243	NA NA	
12a. Modification Work	12b. Work Package	12c. Modification Work Com	<u> </u>		d to Original Condi-	
	No.	120- Modification 11016 Con-	pieta	tion (Temp. or Standby ECN only)		
[ X ] Yes (fill out Blk. 12b)	EL- 97-00622			NA		
[ ] No (NA Biks. 12b, 12c, 12d)		Design Authority/Cog. Signature & Dat		Design Authority/Cog. Engineer Signature & Date		
13a. Description of Change	13b. [	Design Baseline Document? [				
110 00000 0114 0014	ا دامین	,, , ,	.1			
H-2-88992 SH1, REV 9 H-2-89337 SH1, REV 10	±nsta )	11, inspect and to	ST New P	Piping In	stallation	
H-2-89181 SH1, REV 5	in a	ccordance with t	15ME 831	-3 Norm	A Elized	
H-2-89211 SH1, REV 1	Sec	יטונ9.		J 1-51 H	THE PERIOR	
H-2-89200 SH1, REV 3	•	•				
H-2-89047 SH1, REV 6						
H-2-89047 SH2, REV 0						
H-2-89162 SH1, REV 4	- A.A.					
1-1-1-09351-3H1; REV 4	5/22/9					
	2152144					
Í						
SEE PAGE 3 FOR DES	CRIPTION OF CHANG	3ES				
14a, Justification (mark one)						
Criteria Change	Design Improvement	[X] Environmental	11	Facility	Deactivation [	1
As-Found	Facilitate Const	[ ] Const. Error/Omi	: :		Error/Omission	i
14b. Justification Details						
RELOCATE EXISTING	CHEMICAL FEED PU	MPS 2025E-65C-P-5, -6	, -7 FROM TI	HE TOP OF	SURGE TANK 202	25E-
60A-TK-1 TO INSIDE T						
l.						
1		•				
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}						
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1 F. A. McNAMAR	, MSIN, and no. of copies) S6-72 &	A.K. Yankum	56-71	1	<u> </u>	ł
E. A. McNAMAR K. D. JUNT	, MSIN, and no. of copies) S6-72 ★ G3-17	T.W. Dallas	56-74	MAI	2 +mn	İ
K. D. JUNT	S6-72 * G3-17	T.W. Dallas M.W. Bowman	56-72 56-72	DATE:		
K. D. JUNT wee Planning	S6-72 🛠	T.W. Dallas M.W. Bowman B.S. Darling	56-72 56-72 74-65	DATE:	HANFORD	18
K. D. JUNT WCG Planning	S6-72 <b>*</b> G3-17 S6-71 <b>*</b>	T.W. Dallas M.W. Bowman	56-72 56-72		HANFORD	18
K. D. JUNT wee Planning L.L. Lin N.J. Syllivan	S6-72 * G3-17 S6-71 * S6-72 * S6-72	T.W. Dallas M.W. Bowman B.S. Darling	56-72 56-72 74-65	DATE:	HANFORD	18
K. D. JUNT weeplanning L.L. Lin	S6-72 * G3-17 S6-71 * S6-72 * S6-72	T.W. Dallas M.W. Bowman B.S. Darling	56-72 56-72 74-65	DATE:	HANFORD	18

FNGT	NEERING CHANG	E NOTICE		1. ECN (use no. from pg. 1)
LNGI	NEEKING CIPAG	L NOTICE	Page 2 of 18	
16. Design	17. Cost Impact			18. Schedule Impact (days)
Verification Required	ENGINEERI	NG .	CONSTRUCTION	
[X] Yes	Additional []	\$ NA Additional	[7 <b>\$</b> NA	Improvement [] NA
[ ] No	Savings []	\$ NA Savings	[] \$ NA	Delay [] NA
				g documents identified on Side 1)
that will be affe	cted by the change	described in Block 13.	Enter the affected d	ocument number in Block 20.
\$00/00	[]	Setsmic/Stress Analysis	ַ (כֹו	fank Calibration Hanual []
Functional Design Criteria	[]	Stress/Design Report	[]	lealth Physics Procedure
Operating Specification	[]	Interface Control Drawing	[]	pares Multiple Unit Listing
Criticality Specification	[]	Calibration Procedure		Test Procedures/Specification
Conceptual Design Report	[]	Installation Procedure		Component Index
Equipment Spec.	[]	Haintenance Procedure	~ <del>-</del>	SHE Coded 1ten
Const. Spec.	<u> </u>	Engineering Procedure	~~	tuman Factor Consideration
Procurement Spec.	[]	Operating Instruction		Computer Software []
Vendor information	<b>*</b> -	Operating Procedure		Nectric Circuit Schedule
CH Hanual	[X]	Operational Safety Requirem		CRS Procedure []
FSAR/SAR	[]	1EFO Orawing	LJ	Process Control Manual/Plan []
Safety Equipment List	[]	Cell Arrangement Drawing		Process Flow Chart []
Radiation Work Permit	[]	Essential Haterial	<del>-</del> -	Purchase Requisition []
	[]	Specification	[]	
Environmental Impact Statem	ent []	Fac. Proc Samp. Schedule	LJ	
Environmental Report	[]	Inspection Plan	[]	
Environmental Penmit	[]	Inventory Adjustment Reques	<u>" []</u>	()
20. Other Affected De indicate that the Document Numb POP-60-006 POP-65C-00	e signing organizati er/Revision	ocuments listed below wi on has been notified of Document Number/Re	other affected docum	this ECN.) Signatures below ents listed below. Document Number Revision
21. Approvals				
!	Signature	Date	Signa	A
Design Authority £.A.			Design Agent €.A.M.	12/6/48
Cog. Eng. E. A. McNa	men alligo	12/10/48	PE	<u> </u>
Cog. Hgr. N.J. S. 110 (Informal Design Rev	an affull	3-72-91	QA	
QA			Safety	
Safety		<u></u>	Design	
Environ.			Environ.	
Other			Other	
			DEPARTMENT OF ENER	
		dull-mind of the control of the cont	Signature or a Cor tracks the Approva ADDITIONAL	
			•	

Page 3 of 18

ECN 644244 Date NOV 20, 1998

Description of Changes

1) H-2-88992 SH 1. REV 9 Modify as shown on page 4

# 2) H-2-89337 SH 1. REV 10

Modify as shown on page 5

## 3) H-2-89181 SH1, REV 5

- a) Modify as shown on page 6
- b) Add ENLARGED PLAN, as shown on page 7
- c) Add SECTION D, as shown on page 8
- d) Add SECTION E, as shown on page 9
- e) Add SECTION F, as shown on page 10

### 4) H-2-89211 SH 1. REV 1

- a) Add TYPE 32 SUPPORT AND TYPE 35 SUPPORT, as shown on page 11
- b) Add TYPE 33 SUPPORT, as shown on page 12
- c) Add TYPE 34 SUPPORT SKID, as shown on page 13

# 5) H-2-89200 SH 1, REV 3

- a) Modify as shown on page 14
- b) Add ENLARGED PLAN and SECTIONS F & G, as shown on page 15

# 6) H-2-89047 SH 1, REV 6

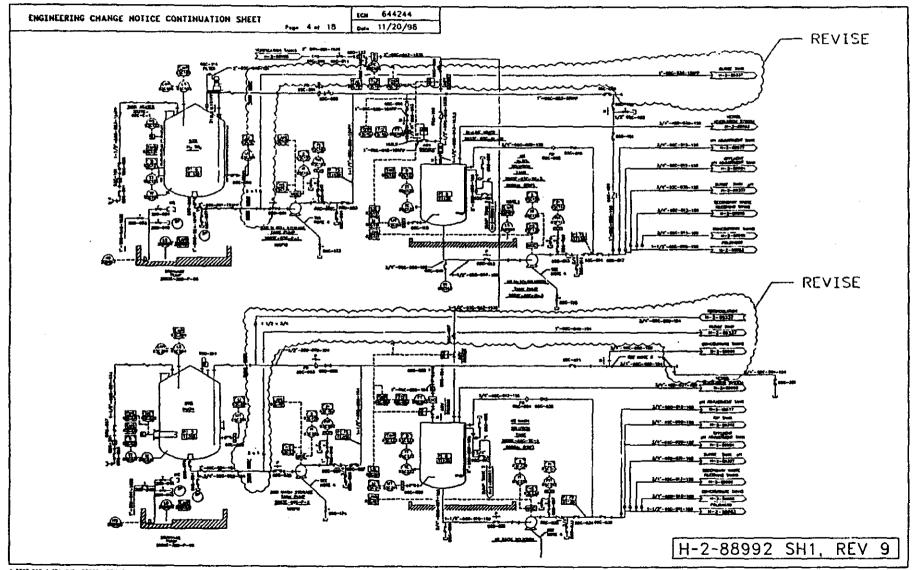
Modify as shown on page 16

# 7) H-2-89162 SH 1. REV 4

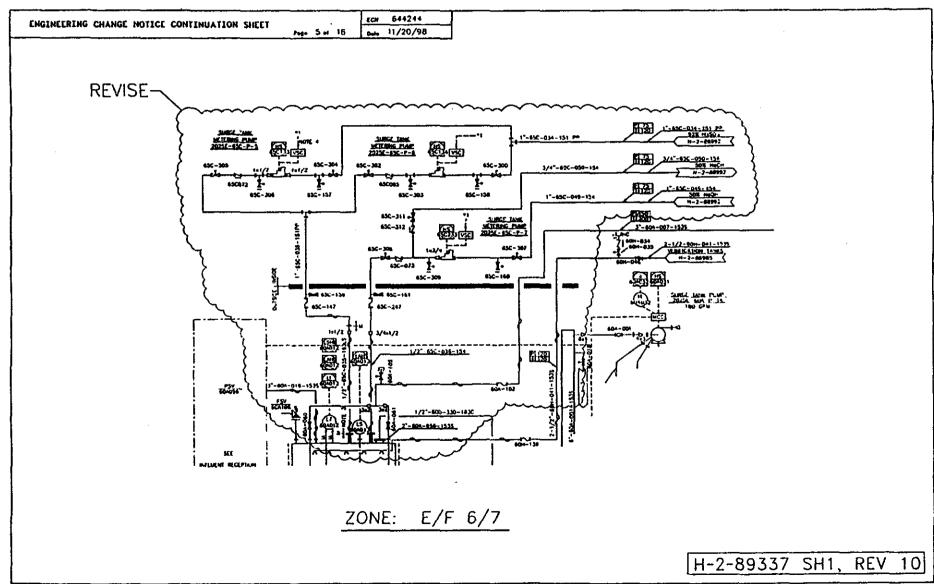
Modify as shown on page 17

### 8) H-2-89047 SH 2. REV 0

Add DETAIL F as shown on page 18



A-7900-913-4 ID4/941 GEF08+ ECHCS



Class 1 Modification Quarter Ending 03/31/2001	DOE/RL-97-03, Rev. 0B 03/2001
1	
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4 5	This page intentionally left blank.
6	k0

Class	1	Mo	dific	ation	:
Quarte	er	En	ding	03/3	1/200

	APPENDIX 4A
2	· 
<b>,</b>	DETAILED DRAWINGS FOR THE LIQUID EFFLUENT RETENTION FACILITY
<b>}</b>	DETAILED DRAWINGS FOR THE LIQUID EFFEDENT RETENTION FACILITY

- 1 Drawings of the containment systems at the LERF are summarized in Table 4A-1. Because the failure of
- 2 these containment systems at LERF could lead to the release of dangerous waste into the environment,
- 3 Engineering Change Notices (ECNs) which affect these containment systems will be submitted to the
- 4 Washington State Department of Ecology, as a Class 1, 2, or 3 permit modification, as required by
- 5 WAC 173-303-830.

6

Table 4A-1. Liquid Effluent Retention Facility Containment System.

LERF System	Drawing Number	Outstanding ECNs	Drawing Title
Bottom Liner	H-2-79590, Sh 1, Rev. 3	None	Civil Plan, Sections and Details; Cell Basin Bottom Liner (Sheet 1)
Top Liner	H-2-79591, Sh 1, Rev. 3	None	Civil Plan, Sections and Details; Cell Basin Bottom Liner (Sheet 1)
Catch Basin	H-2-79593, Sh 1, Rev. 4	None	Civil Plan, Section and Details; Catch Basin
			(Sheet 1)

7

- 9 The drawings identified in Table 4A-2 illustrate the piping and instrumentation configuration within
- 10 LERF, and of the transfer piping systems between the LERF and the 242-A Evaporator. These drawings
- 11 are provided for general information and to demonstrate the adequacy of the design of the LERF as a
- 12 surface impoundment. An update to these drawings and drawings identified in Table 4A-1 will be
- 13 provided annually to the Washington State Department of Ecology.

14

Table 4A-2. Liquid Effluent Retention Facility Piping and Instrumentation.

LERF System	Drawing Number	Outstanding ECNs	Drawing Title
Transfer Piping to 242-A Evaporator	H-2-79604, Sh 1,Rev. 3	ECN-648330	Piping Plot and Key Plans; 242-A Evaporator Condensate Stream (Sheet 1)
LERF Piping and Instrumentation	H-2-88766, Sh 1, Rev. 3	ECN-648330 ECN-656789	P&ID LERF Basin and ETF Influent (Sheet 1)
LERF Piping and Instrumentation	H-2-88766, Sh 2, Rev. 5	ECN-647209L ECN-648330	P&ID LERF Basin and ETF Influent (Sheet 2)
LERF Piping and Instrumentation	H-2-88766, Sh 3, Rev. 6	ECN-648330 ECN-709380L	P&ID LERF Basin and ETF Influent (Sheet 3)
LERF Piping and Instrumentation	H-2-88766, Sh 4, Rev. 6	ECN-648330 ECN-658584	P&ID LERF Basin and ETF Influent (Sheet 4)
	H-2-89351, Sh 1, Rev. 7	None	Piping & Instrumentation Diagram - Legend

15 16

P&ID - piping and instrumentation diagram.

17

<sup>8</sup> P&ID - piping and instrumentation diagram.

# **APPENDIX 4A**

# DETAILED DRAWINGS FOR THE LIQUID EFFLUENT RETENTION FACILITY

Outstanding ECNs

# CPFF135014

# **ORIGINAL**

ENGINEERING CHANGE NOTICE

ESSENTIAL THE NEW PAGE 1 of 718

1.ECN 648330

Proj. ECN

2. ECN Category (mark one)	3. Originator's Name, Orga	alzation, MSIN, and Telephone	No. 4	USQ Required?	5. Date
Supplemental	MA Przybylski, Fi	S, S5-50, 376-401	ין ר	Yes No	10/13/2000
Direct Revision				JIES WNO	10/13/2000
Change ECN O	6. Project Title/No./Work Or		7. Bldg./Sys./I	ac. No.	8. Approval Désignator
Temporary O	Site/Utility Syst		1		
Standby	Privatization Pha		242-AL/6		T, E
Supersedure O	9. Document Numbers Cha sheet no. and rev.)	nged by this ECN (includes	10. Related E	CN No(s).	11. Related PO No.
CancelVoid	See Block 13a Bel		N/A	•	N/A
12a. Medification Work		12c, Modification Work Com.		12d Restored	1
Yes (fill out Bik. 12b)				or Standt	to Original Condition (Temp. y ECNs only)
O No (NA Biks. 125,	EL-00-00209		<del></del>	N/A	
12c, 12d)		Design Authority/Cog. Engis Date	neer Signature &	Design Autho	rity/Cog. Engineer Signature & Date
13a. Description of Change	<u> </u>	13b, Design Baseline Docum	ent? ( Yes	O No	
1H-2-88766 shl, re	v.3: revise as sh	<del>-</del>		O 140	
	,	omi on page of			
·H-2-88766 sh2, re	v.5; revise as sh	own on page 6.			
		• •			
·H-2-88766 sh3, re	v.6; revise as sh	own on page 7.			
·H-2-88766 sh4, re	v.6; revise as sh	own on page 8.			
			<b></b>		
· H-2-88766 sh5, re			Sh 5, Rev i	0 of H-2-88	766 in its
entirety. Approp	rlate changes sho	an on page 9.			
'H-2-88815 sh5, re	v 2: rovice as sh	Of anker to the			
1 1 2 00013 3110, 10	1.27 204250 23 511	on page 101			
H-2-88818 sh2, re	v.0; add elementa.	ry ladder rungs 38	thru 44, a	as shown on	page 11.
•					<u> </u>
H-2-88836 sh3, re	v.l; add terminat:	ion wiring as show	n on page 1	11.	
SEE PAGE 3 FOR C	ONTINUATION OF BLA	OCK 13a.			
· · · · · · · · · · · · · · · · · · ·	<del></del>		·		
14a, Justification (mark one)	14b. Justification Details				
Criteria Change O	•	ies all modificati		existing l	ERF/ETF
Design Improvement O	essential drawin	gs caused by W\$19	tie ins.		•
Environmental O	ì	•			
Facility Deactivation					
As-Found O	}				
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Design Error/Omission	1				,
15. Distribution (include name,					ELEASE STAMP
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RJ Parazin S5-	15°	S5-09 JM Isde: ds R1-29 JB Bento		<u> </u>	CT_312800
ML Alexander E6- MA Friedrich G3-	•	G3-11 MJ Brows		T U	1 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
MA Haq 54-	· · · ·		ced_Copy	DATE:	HANFORD
JL Henderson G3-		5€-72	H-J	1 m. 2.	1
JJ Huston B4-		56-72	·· •	57A:30	
MA Przybylski*S5-		SE-74		ł	~~
				}	

1. ECN (use no. from pg. 1) ENGINEERIN Page 2 of 18 648330 16. Design Verification Required 17. Cost Impact 15. Schedule Impact (days) **ENGINEERING** CONSTRUCTION Additional O X Yes Additional O \$ N/A Improvement O N/A No Savings s N/A Savings O N/A Delay Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 13. Enter the affected document number in Block 20. S00/00 Seismic/Stress Analysis Tank Calibration Manual Functional Design Criteria Stress/Design Report o Health Physics Procedure Operating Specification Interface Control Drawing Spares Multiple Unit Listing Ø Criticality Specification Calibration Procedure Test Procedures/Specification Ď Z Conceptual Design Report Installation Procedure Component Index Ø Maintenance Procedure Equipment Spec. ASME Coded Item Const. Spec. Engineering Procedure П Human Factor Consideration Procurement Spec. Operating Instruction Computer Software X Operating Procedure Vendor Information Electric Circuit Schedule OM Manual Operational Safety Regulrement ICRS Procedure  $\Box$ FSAR/SAR **IEFD Drawing** Process Control Manual/Plan Cell Arrangement Drawing Safety Equipment List Process Flow Chart  $\Box$ П Purchase Requisition Radiation Work Permit Essential Material Specification  $\Box$ Environmental Impact Statement Fac. Proc. Samp. Schedule Tickler File 41/A- 221 <del>R</del> П П Environmental Report Inspection Plan **Environmental Permit** Inventory Adjustment Request Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below. Document Number/Revision \*\* 10/31/80 Document Number/Revision Document Number/Revision See Page 3 and 4 for Other Affected Documents. POP-604-003 . ARP-604-001 POP-60M-001 21. Approvals Signature Date Signature mylyloh 10-31-00 Design Authority CINFORMAL REVIEW, PE Cog. Eng 10-31-00 Cog. Mgr QA OA Safety Safety Design 10-31-00 Environ Environ Other Other DEPARTMENT OF ENERGY Signature or a Control Number that tracks the Approval Signature ADDITIONAL

A-7900-013-3 (10/97)

Page 3 of 18

ECN 648330 Date 10/13/2000

### 13a.CONTINUATION:

: H-2-79668 sh5, rev.6; add additional heat trace loads to elementary diagrams as shown on page 12.

-H-2-85323 sh1, rev.0; add panelboard A as shown on page 13.

H-2-85323 sh3, rev.2; revise as shown on page 14.

.H-2-85323 sh4, rev.4; revise as shown on page 15.

·H-2-85323 sh5, rev.2; revise as shown on page 16.

H-2-85323 sh8, rev.0; add new sheet 8 as shown on page 17.

- Plock 20+ Other Affected Documents:

H-2-79604, sh1 / Rev 3 / This drawing is modified by project W519, drawing H-2-830093, sh 1.

H-13-000198, sh 1 / Rev 1 / & sh 2 / Rev 1 / These drawings are modified by 'project W519, drawing H-2-830093.

H-13-000198, sh 3 / Rev 1 / Add the following pipelines to drawing. Also see this ECN (648330) for pipeline information.

4"-WTP-001-M17, 3"-WTP-002-M17, 4"-80W-001-M17, 4"-80W-002-M17

4"-80W-QQ3-M17, 4"-80W-004-M17, 4"-80W-005-M17

H-2-796096 Rev 3 / This drawing is modified by project W519, drawings H-2-830095, sh 1, H-2-830096, sh 1 and H-2-830097, sh 1. The 3"-WTP-002-M17 line ties into the PC5000 line at H41804.7, W47070 at STA 1+357.1 (Zone D-5).

H-2-79610 MeV 3 / This drawing is modified by project W519, drawings H-2-830097 sh 1 and H-2-830098 sh 1.

H-2-79613 Rev 4 / This drawing is modified by project W519, drawing H-2-830099, sh 1-3.

H-2-79614 / Rev 4 / This drawing is modified by project W519, drawing H-2-830100, sh 1-3.

H-2-79615 7 Rev 4 / This drawing is modified by project W519, drawing H-2-830101, sh 1-3.

H-2-88738, sh 1 / Rev 1 / & sh 2 / Rev 1 / Modified by project W519. See drawings H-2-830105 through H-2-830109 for changes.

H-2-88810, sh 1 / Rev 1 / sh 2 / Rev. 1 / sh 3 / Rev 1 / sh 4 / Rev 0 / Modified by project W519. See drawings H-2-830105 through H-2-830109 for changes.

H-2-88813, sh 1 / Rev 1 / & sh 2 / Rev 1 / sh 4 / Pev 0 / Modified by project W519. See drawings H-2-830105 through H-2-830109 for changes.

H-2-88617, sh 1 / Rev 2 / Modified by project W519. See drawings H-2-830105 through H-2-830109 for changes.

H=2-88818, sh 2 / Rev 0 / Modified by project W519. See drawings H=2-830105 through H=2-830109 for changes.

Page 4 of 18

ECN 648330

Date 10/13/2000

Tre Miles

## Block 20: Other Affected Documents (Cont'd):

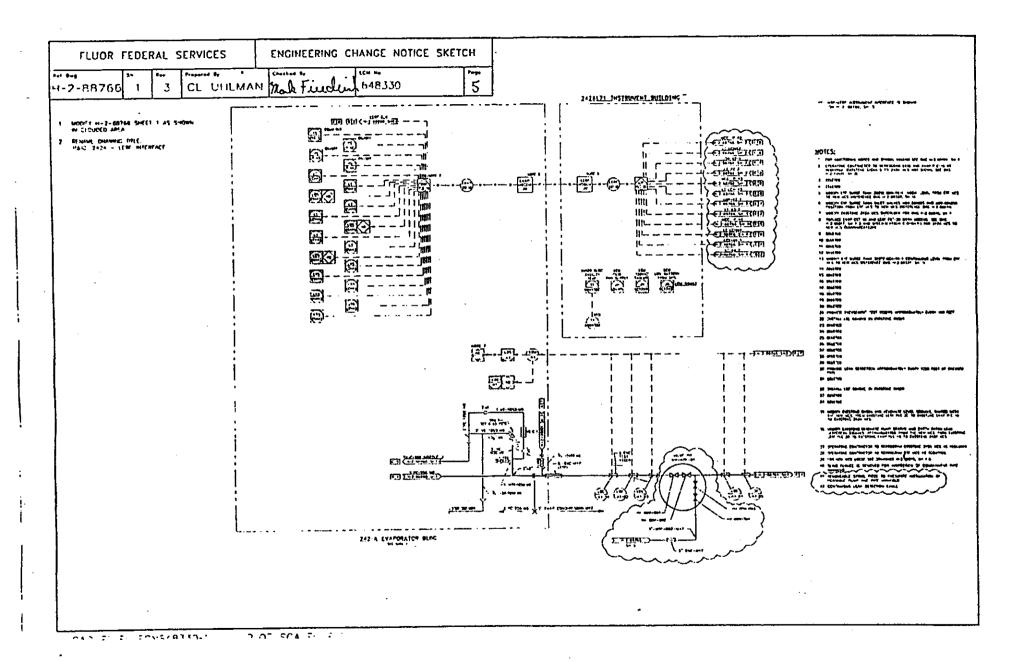
H-2-88836, sh 3 / Rev 1 / Modified by project W519. See drawings H-2-830105 through H-2-830109 for changes.

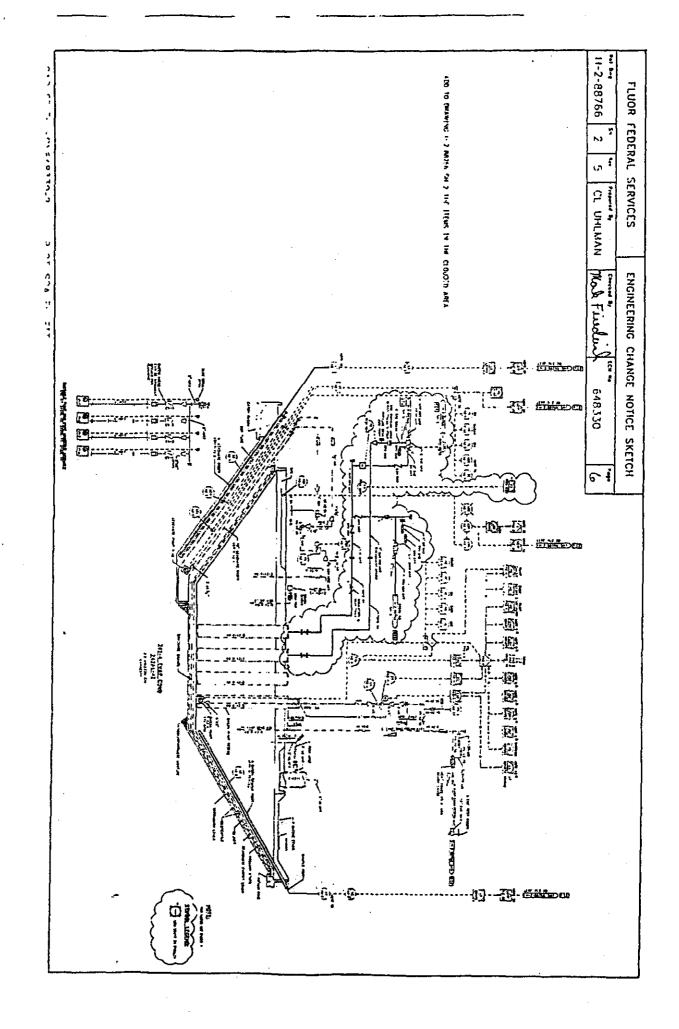
H-2-140321, Sh 1 / Rev 1 / Modified by project W519. See drawings H-2-830093 for project drawing listing.

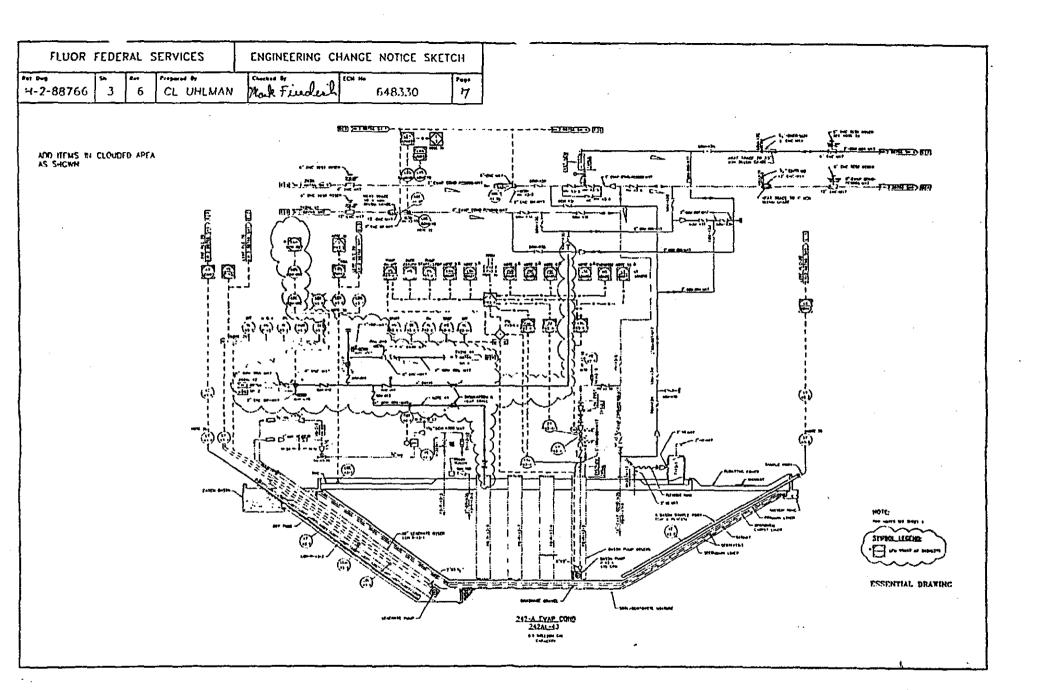
H-2-140323, Sh 1 / Rev 1 / Modified by project W519. See drawings H-2-830093 for project drawing listing.

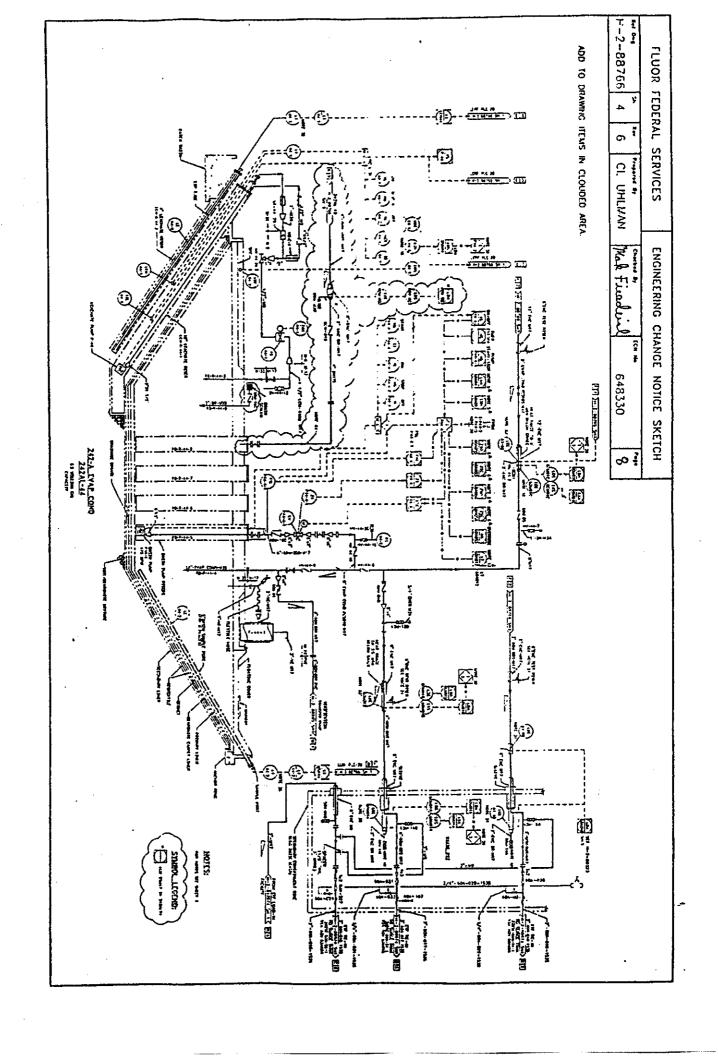
H-2-140342, Sh 1 / Rev 2 / Modified by project W519. See drawings H-2-830093 for project drawing listing. The "J" line ties into the "H" line at N42281.5, W47238.6 at station  $1\div444.5$ .

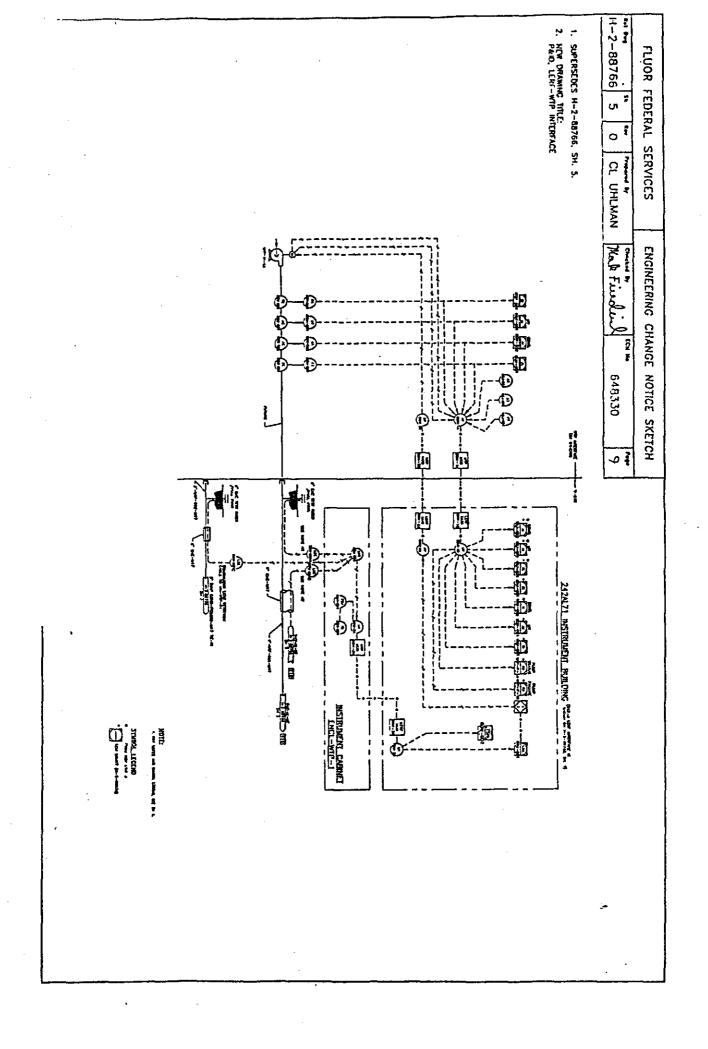
H-2-140377, Sh 1 / Rev 1 / Modified by project W519. See drawings H-2-830093 for project drawing listing.

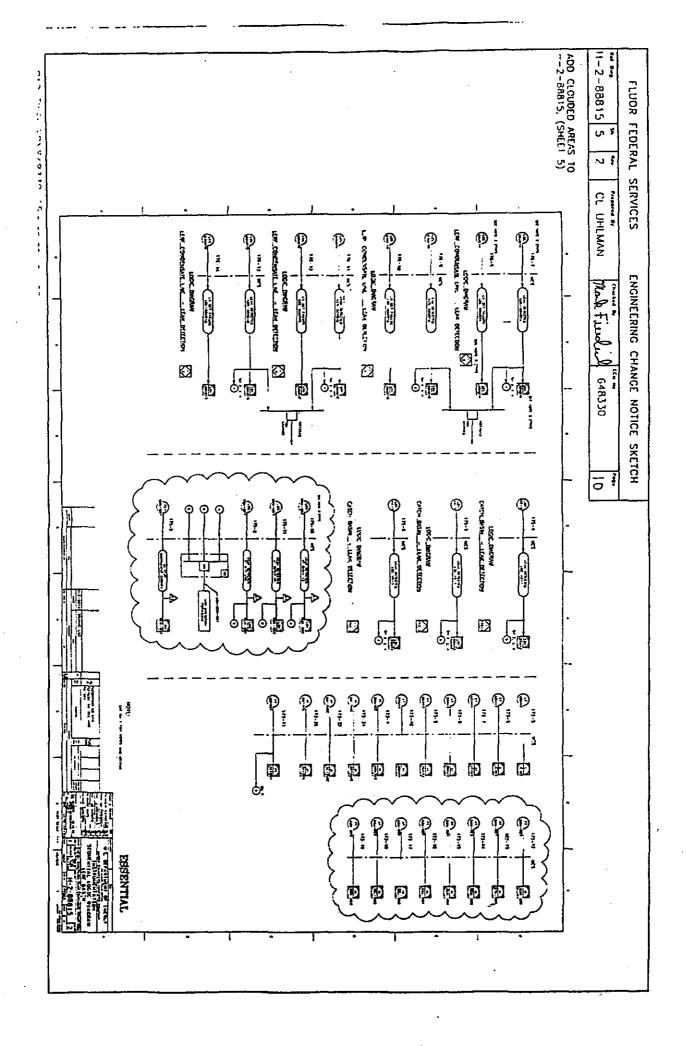


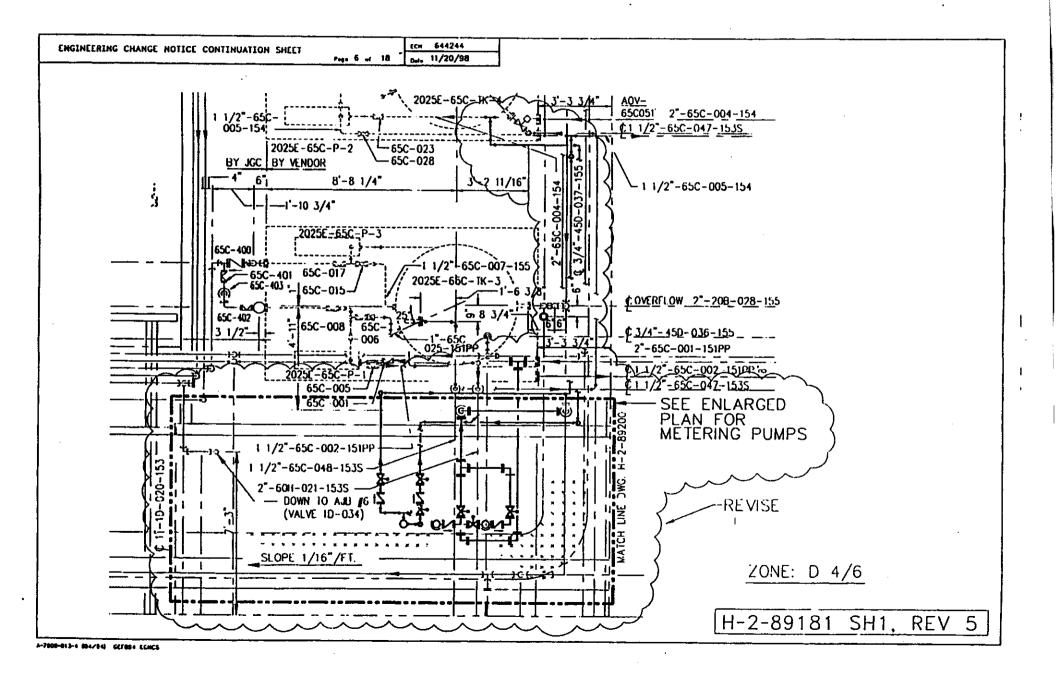


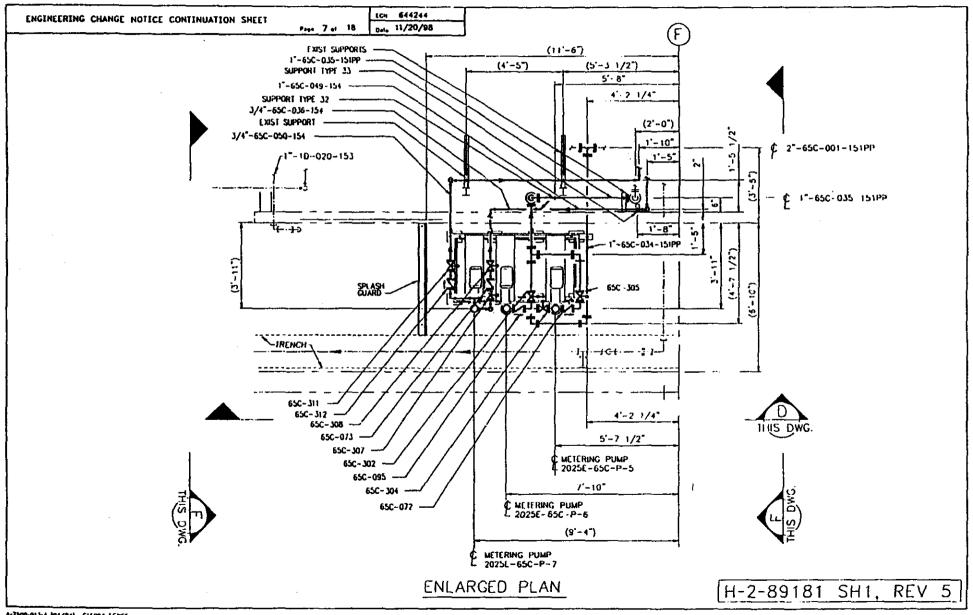


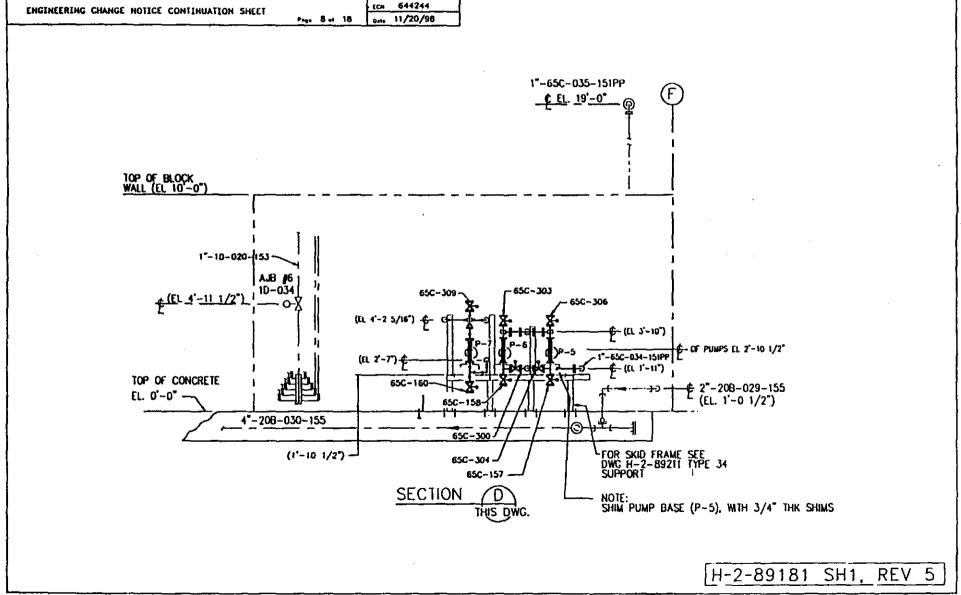


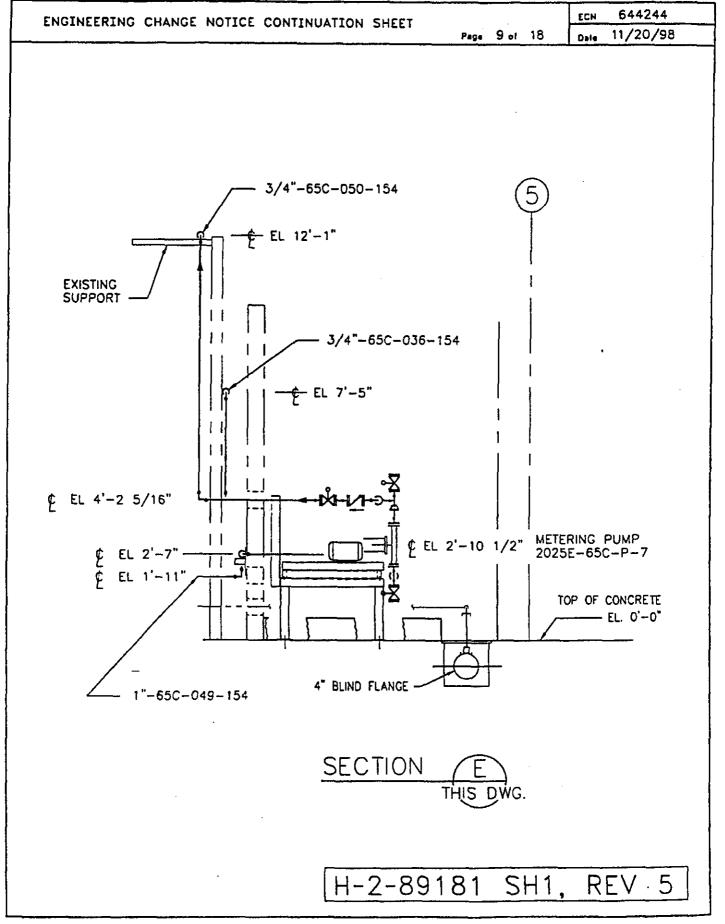








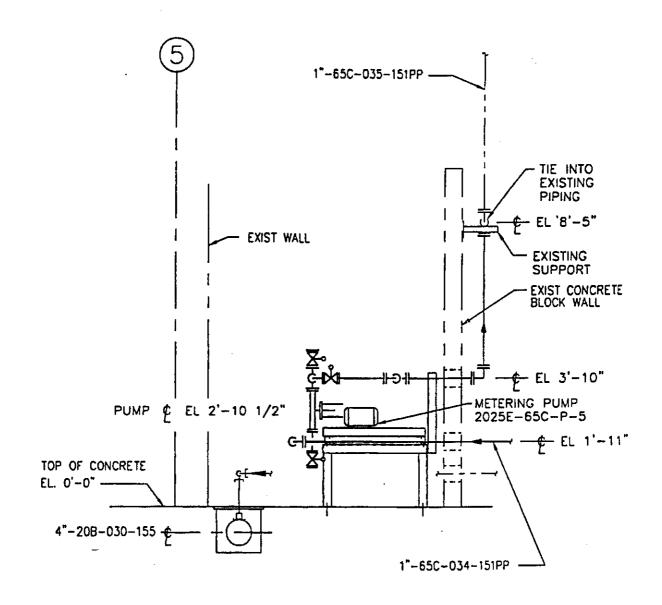


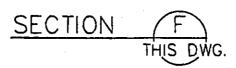


Page 10 of 18

644244 ECN

11/20/98 Date



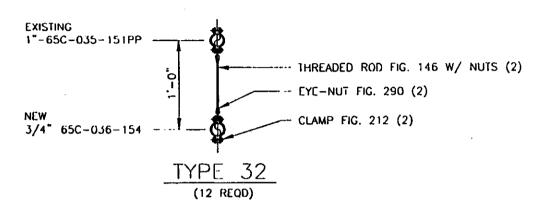


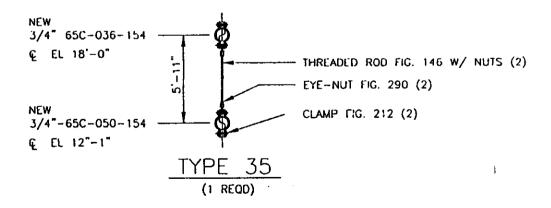
H-2-89181 SH1, REV



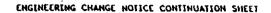
Page 11 at 18

ECN 644244 Date 11/20/98





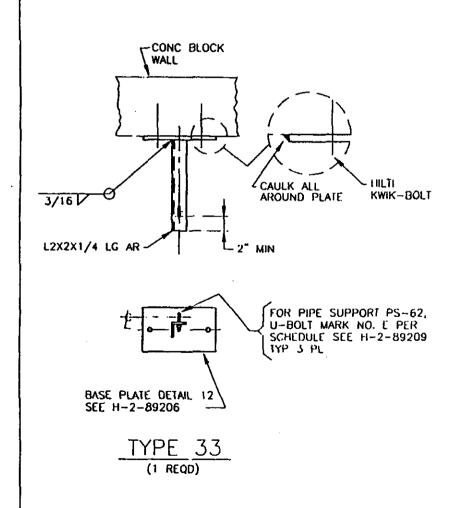
H-2-89211 SH1, REV 1

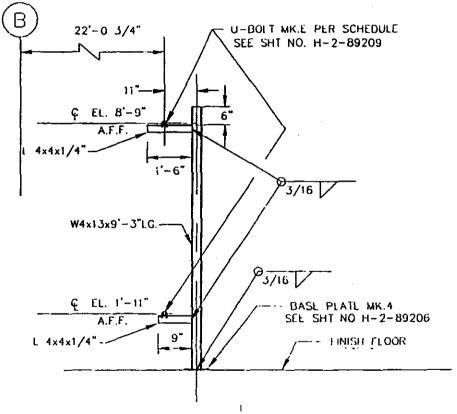


Page 12 of 18

18 T

ECH 644244 Date 11/20/98



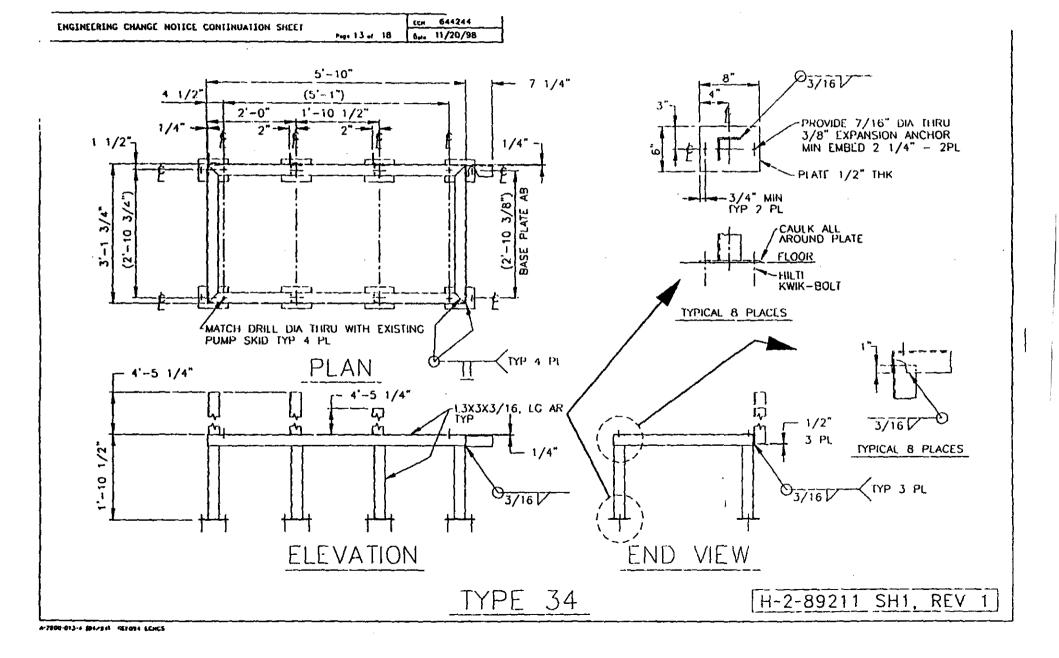


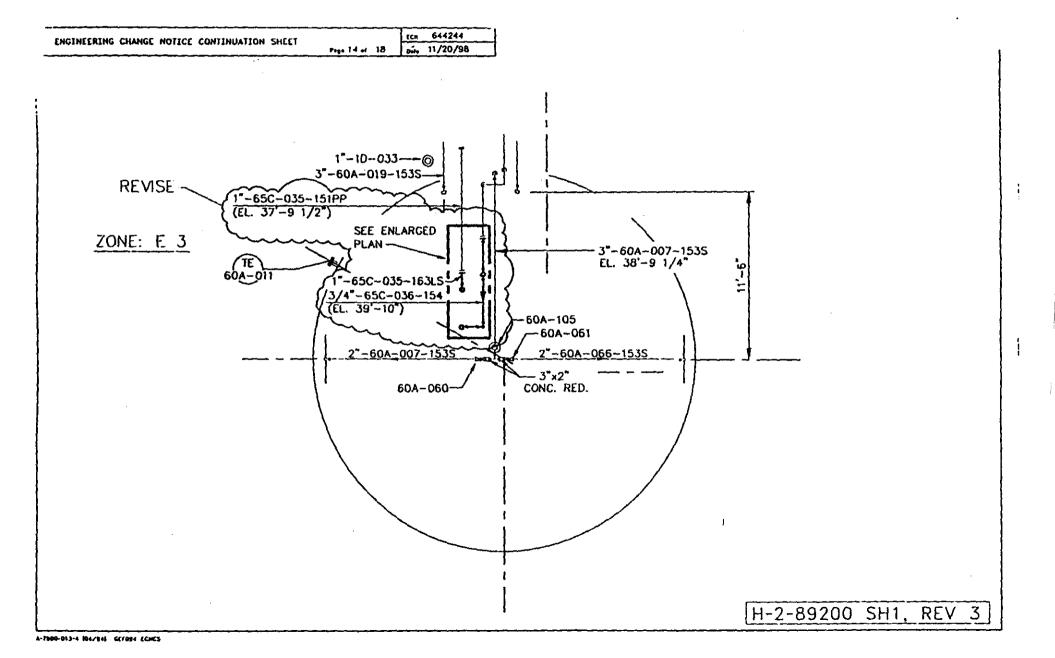
TYPE 26 (NON-TYPICAL)

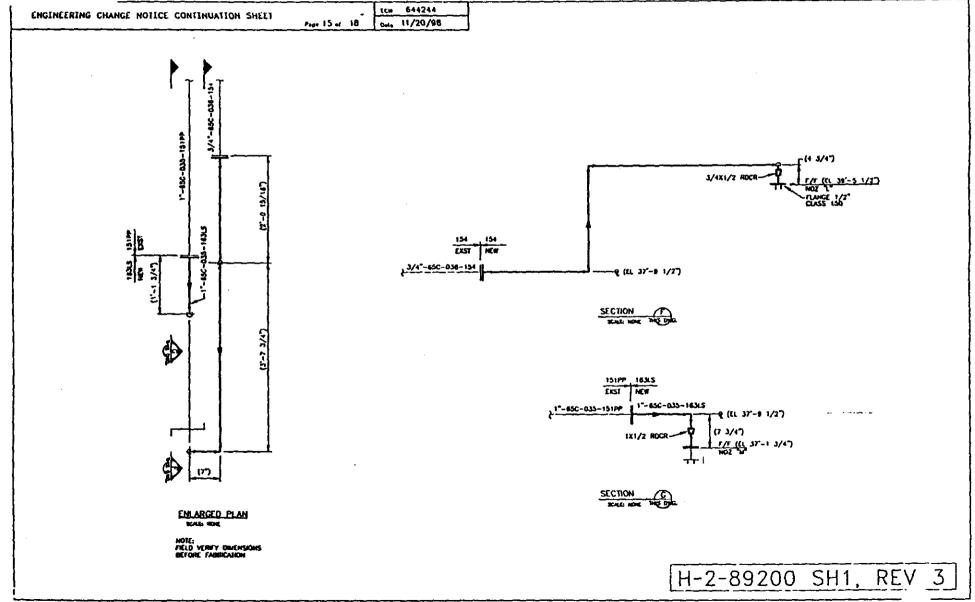
LLEV. LKG. EAST

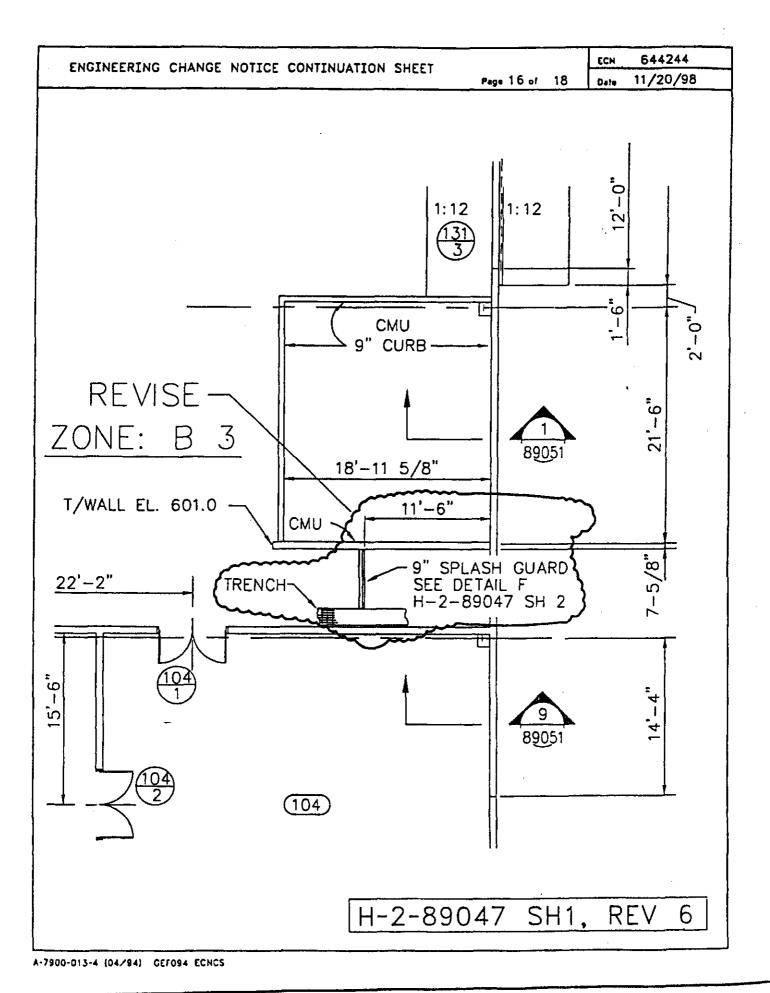
1/2" = 1'-0"

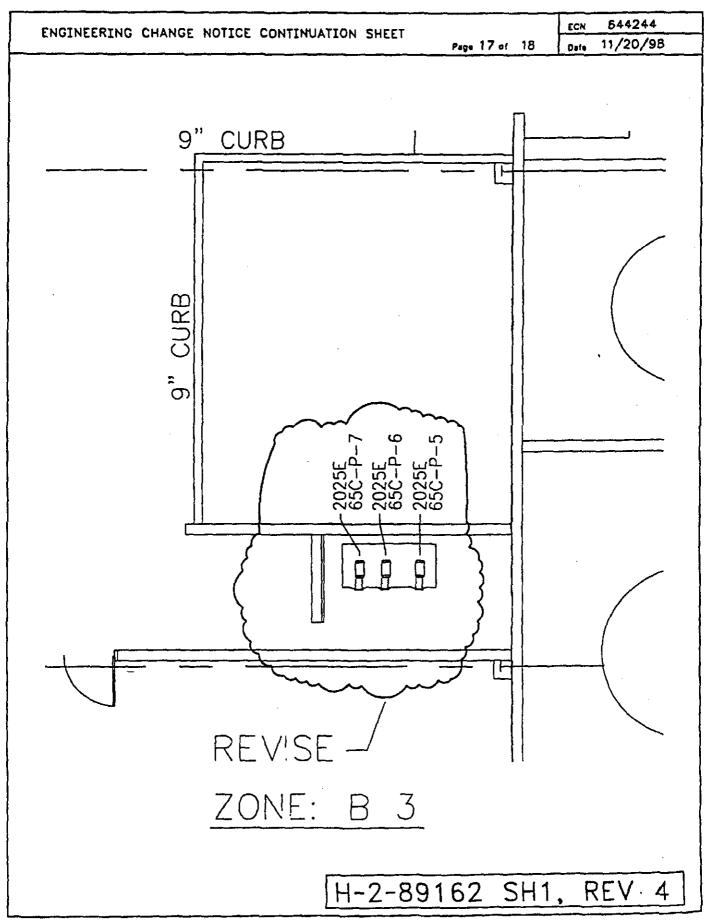
H-2-89211 SH1, REV









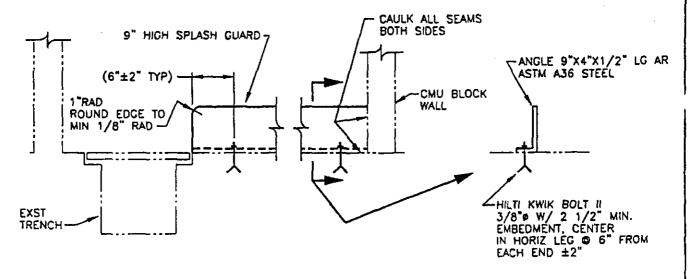


Page 18 of 18

ECN 644244 Date 11/20/98

NOTE:

COAT WITH SPC IN ACCORDANCE WITH CONSTRUCTION SPEC S-1131-103, REV 4, SECTION 09805



SECTION F SCALE: NONE H-2-B9047 SH 1

H-2-89047 SH 2, REV 0

# ENGINEERING CHANGE NOTICE ESSENTIAL

647245 1, ECN

Proj. ECN

CPF 18

2. ECN Category (mark one)	Originator's Name, Orginal Telephone No.	anization, MSIN,	4. USQ Require	:d7	5. Date
, , , ,	RN Wagner/32200/S	6-72/376-4460	[] Yes [X] No	)	June 22, 1998
Supplemental [x] Direct Revision []	6. Project Title/No/Work		7. Bldg/Sys/Fr		8. Approval Designator
Direct Revision [] Change ECN []	[		•	2/60D/	NA
Temporary []	1	d Valves in Peroxide Feed  Iand Switch Number	2023E		) NA
Standby []					
Supersedure [] Cancel/Void []	9. Document Numbers Che (includes sheet no. and re		10. Related EC	N No(s).	11. Related PO No.
	See	Block 13	И	A	NA
12a. Medification Work	12b. Work Package No.	12c. Modification Work Comple	ele		to Original Condi- Standby ECN only)
	EL-98-00463	,		Hom (Temp. or	
[X] Yes (fill out Blk. 12b)	EE-76-00403	<b>}</b>			NA
[] No (NA Biks. 12b,	. )	Design Authority/Cog. 1	Engineer	Design	Authority/Cog. Engineer
12c, 12d)		Signature & Dat			Signature & Date
13a. Description of Change	13b. I	Design Baseline Document? [X] Y	es [] No		•
This ECN adds needle valve	es to the UV/OX hydrog	en peroxide injection system	for the purpos	e of bleeding	system pressure in a
controlled manner prior to n	naintenance, and correct	s the number of a hand swite	h for one of the	e peroxide ini	ection feed pumps as
shown on the drawing. The	new pressure bleed value	ves will be Whitey part num!	ber SS-1VS4 3	16 or enginee	ring approved equivalent
consistent with the system p			<b></b>	•	
Drawings affected are:		•			-
. H-2-88976, Sheet 1, R	ev. 6	•			
. H-2-89342, Sheet 1, R		•			
<ul> <li>H-2-89350, Sheet 1, R.</li> </ul>					
Piping, fittings, and jointing	methods shall meet the	requirements of ETF Piping	Specification (	Class 153T, "	Type 316 Stainless Steel
Tubing." Install, inspect, ar	nd test the new piping in	stallation in accordance with	ASME B31.3	and Addenda	for Category D fluid
service.					
(Block 13a continued on Pa	ge 3)	•			•
14a. Justification (mark one)			·		4. 4.27
Criteria Change	Design Improvement	[X] Environmental	0	Facility	Deactivation []
As-Found [X]	Facilitate Const	[] Const. Error/Omiss	sion []	Design I	Error/Omission []
14b. Justification Details		**	- <u></u>		
Provides a safe and controll	ed means of bleeding sy	stem pressure prior to maint	enance and co	rrects a drawii	ng error (hand switch
number)	ca triogrip of orecords pl	Ment presoure prior to in-un-			
Hamoer):					_
l					
15. Distribution (include name, M	SIN, and no. of copies)			· K	ELERAE AT AIVE
N. J. Sullivan S6-72	1 R. J. Nicklas	T3-07 1	Į.	1	UN 2/9 1998
J. E. Geary \$6-71	1 A.K. Yoakum	\$6-71	<b>§</b>	1	العلمان بالمرازات
R. N. Wagner S6-72	2 M. W. Bowman	\$6-72 1 T4-05	į	DATE:	A HANEOUR }
E. A. McNamar S6-72 D. L. Tubbs S6-74	1 C. D. Skogley 1 WCC Planning	T4-05 1 S6-71* i		ļ	HANFORD L
D. P. Nelsen S6-71	i T. W. Dallas	S6-74 1		STA:	RELEASE )
J. M. Petty 56-74	D. L. Flycki	S6-71 1	I I	1 70	) I
3. 10. 1 40.			1	1 Mar. ~	' <b>\_</b>
J. M. Isdeli G3-17 (* = 1 Advance Copy)	i* LLLin	SG-72 1	1	Maria .	25

E	ngineering chan	GE NOTICE	Page 2 of 8	1. ECN (use no 647245	. from pg. 1)
16. Design	17 Cord Impact	> NA <		18. Schedule Impact (da)	ya)
Verification	ENGINEERING	э , c	ONSTRUCTION	NA	
Remind [X] Yes	Additional []	\$ Additional	i) s	Improvement	0
[] No	Savings []	S Savings	[] S	Delay	Ď
		is (other than the engineering do i. Enter the affected document of			
\$DD/DD	[NA]	Science/Street Analysis	[NA]	Tank Calibration Manual	[NA]
Punctional Design Criteria	[NA]	Strend Design Report	[NA]	Health Physics Procedure	[NA] .
Opening Specification	[NA]	Interface Control Drawing	[NA]	Spares Multiple Unit Listing	[NA]
Criticality Specification	[NA]	Calibration Procedure	[NA]	Test Procedures/Sycalization	[NA]
Conceptual Design Report	[NA]	Isotalistion Procedure	[NA]	Component Index	(x)
Equipment Spec.	[NA]	Maintenance Procedure	[NA]	ASME Coded Item	[NA]
Const. Spec.	[NA]	Engineering Procedure	[NA]	Human Factor Consideration	[NA]
Procurement Spec.	[NA] .	Operating Instruction	[NA]	Computer Software	[NA]
Vendor Information	[NA]	Operating Procedure	[X]	Electric Circuit Schedule	[NA]
OM Manuel	[AN]	Operational Safety Requirement	[NA]	ICRS Procedure	[NA]
FSAR/SAR	[NA]	IEPD Drawing	[NA]	Process Control Manual/Plan	[NA]
Safety Equipment List	[NA]	Cell Atrangement Drawing	[NA]	Process Flow Chart	[NA]
Rediction Work Permit	[AN]	Essental Material Specification	[NA]	Purchase Requisition	[NA]
Environmental Impact Statement	[AÌ/I]	Fac, Proc. Samp. Schedule	[NA]	Tickler File	· [NA]
Environmental Report	[AV]	Inspection Plan			
Environmental Pennit		Inventory Adjustment Request	[NA]		0
	(AM)		. [NA]		0
		d below will not be revised by the fother affected documents listed			
Document Nu	mber/Revision	Document Number/	Revision	Document Number R	evision
JCS Compo	nent Index	POP-60D-006 R	ev. 11		
,					
21 Approvals	•	_	4		_
Therefore Assathanders III has been	Signature W/	Date		aturo 0/1/	Date CP/461
Design Authority • R. N. V Cog. Eng. – R. N. Wagner	- CMF4-	(बिक्सेन्ट्रि (बिक्सेन्ट्रि	Design Agent - R. N. Way PE	ener range	245464
Cog. Mgr R. J. Nicklas (Informal Design Review	241.00 - Sac	6-12-98	QA		
QA QA			Safety		
Safety			Design		
Environ.			Environ		
Other _			Other		. ——
			DEPARTMENT OF ENE	RGY	
			Signature or a Control Nur Approval Signature	<del></del>	
		•			
		-	ADDITIONAL		
		<del></del>			
				•	
		<del></del>		•	

ENGINEERING CHANGE NOTICE CONTINUATION SHEET Page 3 of 8 ECN 647245 Date 6/22/98

# BLOCK 13a CONTINUED

# H-2-88976, Sheet 1, Rev. 6, Zones C6-F6

H105FEED PUMP 1A2

1/4"-600-123-163C

H105FEED PUMP 1A1

H105FEED PUMP 1A1

H-2-89350

1/4"-600-124-163C

H-2-89350

1/4"-600-124-153T

H304FEED PUMP 182

H-2-89350

1/4"-600-126-163C

H-2-89350

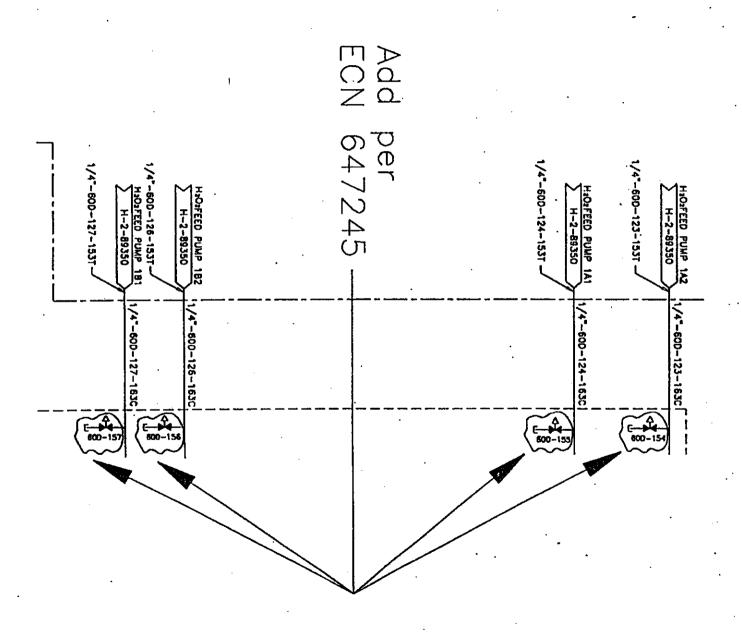
1/4"-600-127-163C

1/4"-600-127-163C

Date 6/22/98	Page 4 of 8	ENGINEERING CHANGE NOTICE CONTINUATION SHEET
ECN 647245		

# H-2-88976, Sheet 1, Rev. 6, Zones C6-F6

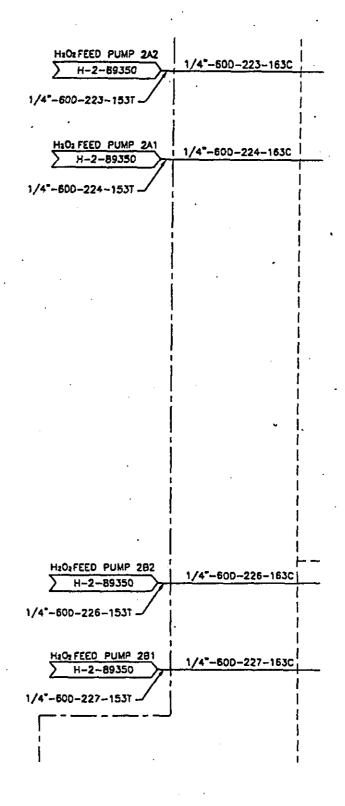
CHANGE TO:



ENGINEERING CHANGE NOTICE CONTINUATION SHEET Page 5 of \$\frac{\gamma}{2}\$ Date 6/22/98

# H-2-89342, Sheet 1, Rev. 6, Zones C7-F7

IS:

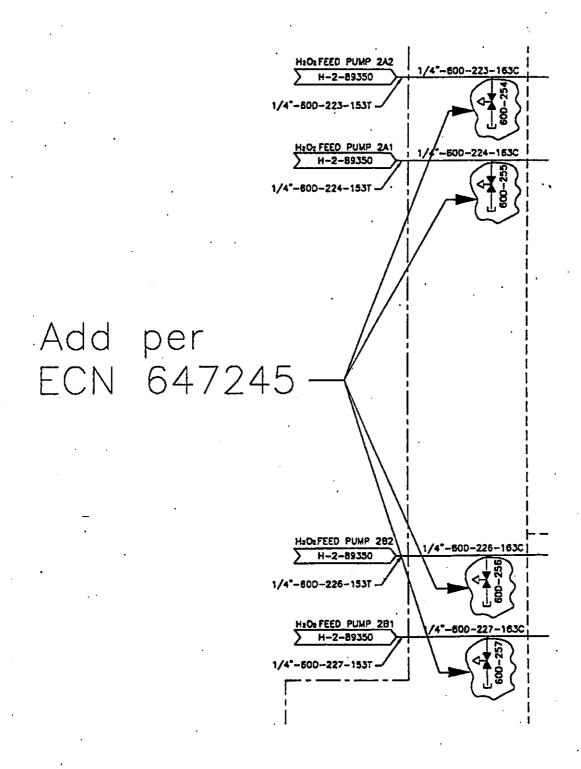


Page 6 of 8

Date 6/22/98

## H-2-89342, Sheet 1, Rev. 6, Zones C7-F7

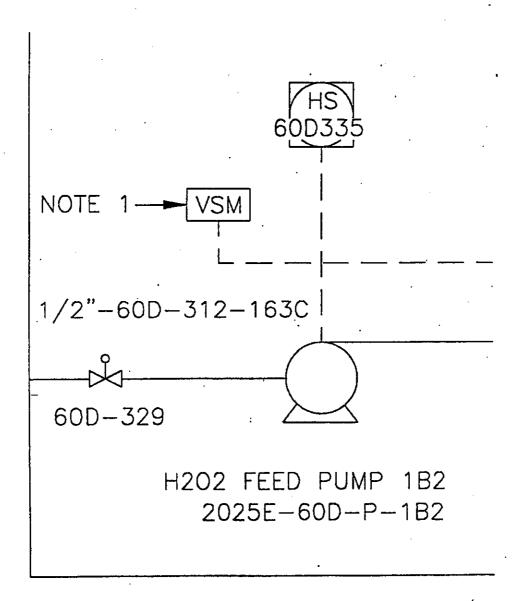
CHANGE TO:



		ECN 647245
ENGINEERING CHANGE NOTICE CONTINUATION SHEET	Page 7 of	Date 6/22/98

## H-2-89350, Sheet 1, Rev. 8, Zone B6

IS:



ECN 647245

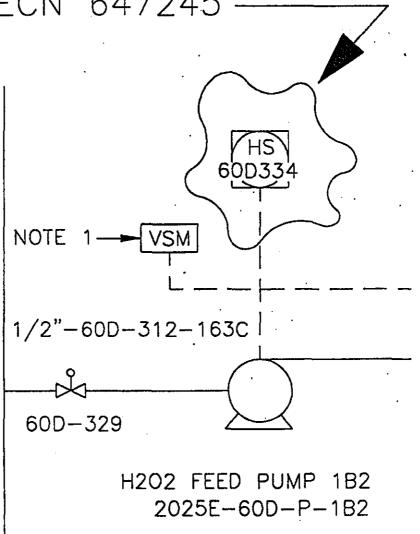
Date 6/22/98

Page 8 of \_ 8

ENGINEERING CHANGE NOTICE CONTINUATION SHEET

H-2-89350, Sheet 1, Rev. 8, Zone B6

CHANGE TO:



# ENGINEERING CHANGE NOTICE ESSENTIA!

	642800
Proj. ECN	d <del>- 1, a</del> ca a ca a a a a a a a a a a a a a a

CPF 18

<del></del>	<del></del>		,		<del></del>
2. ECN Category (mark one)	<ol> <li>Originator's Name and Telephone No.</li> </ol>	e, Organization, MSIN,	4. USQ Requ	ired?	5. Date
(mark one)	•	S6-72, 372-2759	[] Yes [	X] No	10/01/97
Direct Revision []	6. Project Title/No.	/Work Order No.	7. Bldg./Sy		8. Approval Designator
Change ECN [] Temporary []		mple Point on	20259	/60G	NA
\$tandby [] Supersedure [X]		Skid Drain			
Cancel/Void []	9. Document Numbers	er/A4055	10. Related	ECH Mada	11. Related PO No.
	(includes sheet r	o. and rev.)	IV. RETALED	ECH HO(S).	ii. Ketated PU No.
		Rev Ø, Sh 1	ECN-1	92548	None
12a. Modification Work	12b. Work Package No.	12c. Modification Work (	Complete		ed to Original Condi- or Standby ECN only)
[X] Yes (fill out Blk.	EL-95-000233				NA
[] No (NA Blks. 12b,		Design Authority/Cog.	Engineer	Design A	uthòrity/Cog. Engineer
12c, 12d)		Signature & Da			ignature & Date
13a. Description of Change		13b. Design Baseline (	Document? [	X] Yes [	] No
This ECN supersedes	ECN 192548 in	its entirety.			
Description of Char	iges:				
Affected documents:					
ECN-192548 H-2-88983 Rev 6 P8	ID Polisher				
	•				
See pages 3 and 4 c	of this ECN for	details.			
14s. Justification (mark o	ne)				
Criteria Change []	Design Improvement	[X] Environmental	[]	Facili	ty Deactivation []
As-Found [X]	Facilitate Const	[] Const. Error/O	==		Error/Omission []
14b. Justification Details					
A sample valve is r					
determination of the regeneration.	e adequacy of t	ue atom KTW2E and	LW21 KTM21	steps of	the polisher
		•			
This ECN also corre	ects drawing err	ors.			
15. Distribution (include	name, MSIN, and no. o	f copies)	T I	-	KELEASE STAMP
L. L. Lin, S6-72, 1	j. E	. Geary, S6-71, 1	.	וח	CT_078 1997
N. J. Sullivan, S6-	-72, 1 E. A	. McNamar, S6-72, L. Wagner, S6-72, 1	1		الالها كالمعرر
D. P. Nelsen, S6-71 D. L. Tubbs, S6-74,		. Hagner, 30-72, 1	- 1	DATE	T HANFORD
ETF Tech Library, &	16-72 dec.,		<b>!</b>	STA:	RELEASE ) ID:
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1				}	~~~

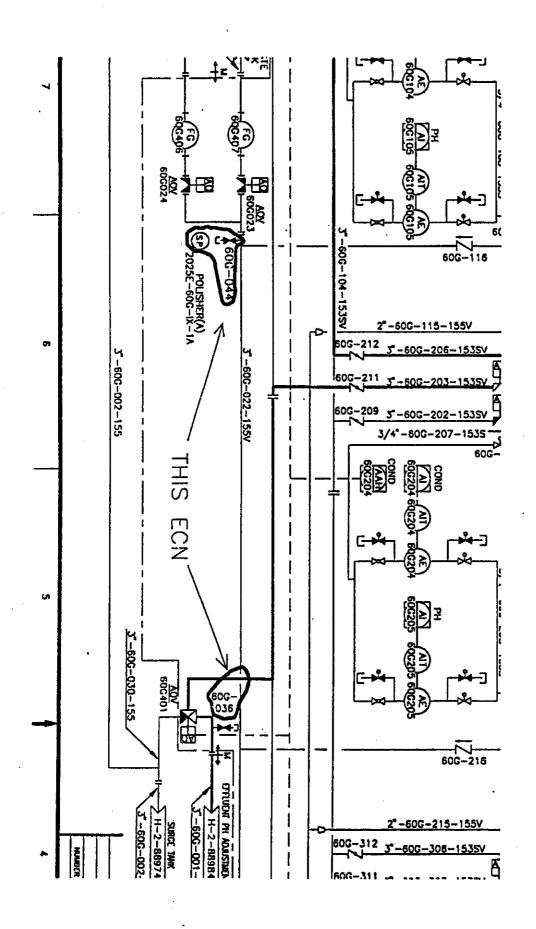
E/	IGINEERING C	HANGE N	TICE	Page 2 o	f 4 642800	
d/ Basina	47 6 1			•	40 04-44-1-	and delivery
16. Design Verification	17. Cost Impact	EERING	CON	STRUCTION .	18. Schedule 1mp	act (days)
Required		FT P		TT A	1	63
[X] Yes	Additional	[] \$	Additional	fi ž	Improvement	[]
[] No	Savings	[] \$	Savings	113	Delay	<u>lj</u>
					ng documents identified document number in Bloc	
SOD/DD	[na]	_	nīc/Stress Analysis	[na]	Tank Calibration Manu	
Functional Design Criteria		Stree	ıs/Design Report	Ìa 🐪	Health Physics Procedo	
Operating Specification	đi	Inter	face Control Drawing	. čħ	Spares Multiple Unit Li	
Criticality Specification	ίli	Calib	ration Procedure	ili	Test Procedures/Specia	fication [
Conceptual Design Repor	· [fi	Insta	Nation Procedure	čĺΣ	Component Index	[x̃]
Equipment Spec.	įį	Main	tenance Procedure	ĉδ	ASME Coded Item	[/}r
Const. Spec.	Ĩ Ī	Engi	neering Procedure	ίδ	Human Factor Conside	
Procurement Spec.	Ū	Oper	ating Instruction	Ġ.	Computer Software	ίb
Vendor Information	[x]	Oper	ating Procedure	[x]	Electric Circuit Schedu	l• []
OM Manual	FA <sup>*</sup>	Oper	ational Safety Requiremor	" [] "	ICAS Procedure	
FSAR/SAR	<u>[j]</u>	IEFD	Drawing	[x]	Process Control Manua	il/Plan
Safety Equipment List	(j)	Cell	Arrangement Drawing	IJa	Process Flow Chart	[]
Radiation Work Permit	<b>(</b> )	Esse	ntial Material Specification	ִי (נְּ)	Purchase Requisition	<b>[þ</b>
Environmental Impact St	stement []	Fac.	Proc. Samp. Schedule	<b>(</b>  )	Tickler File	[þ
Environmental Report	<b>d</b> o	Inspi	ection Plan	(1)		[]
Environmental Permit	<u>(y)</u>		ntory Adjustment Request	L°3		[8
indicate that t	he signing organi mber/Revision	: Documents zation has b	listed below will m men notified of othe Document Number/Rev	r affected docur	y this ECN.) Signature ments listed below. Document Number	
21. Approvals	,					
	Signature		Date		Signature	0ate
Design Authority L	. L. Lindlep	تمك	· /0-/-9/	Design Agent 🗬	and the second	109 17
Cog. Eng. L. L. Li			10-1-97	PE		
Cog. Mgr. N. J. St		<b>-</b>	10-1-99	CA Safety		<del></del>
QA 1	<del>-</del>			Design		
Safety				Environ.		
Environ. Other	•		•	Other		
other -				• 11101		
,				DEPARTMENT OF E	NERGY	
•			***	Signature or a	Control Number that	
				tracks the Appr	roval Signature	
				ADD 1710HA1		
				ADDITIONAL		
				•		

1. ECN (use no. from pg. 1)

Page 3 of 4

ECN 642800 Date 10/01/97

- 1. Install a 1/2 inch sample valve, 60G-044, at the polisher drain header (3"-60G-022-155V). Material type and pressure rating for the installation shall be compatible with ETF pipe class 155V for INDECK.
- 2. Correct drawing error for valve number call out. Change 60G-407 to 60G-036.
- 3. Correct drawing error on polisher waste drain header 3"-60G-022-155V.
- 4. Piping, fittings and jointing methods are to meet the requirements of ETF piping spec class 155V. Install, inspect and test the new piping installation in accordance with ASME B31.3-1993 edition and addenda for Normal Fluid Service.

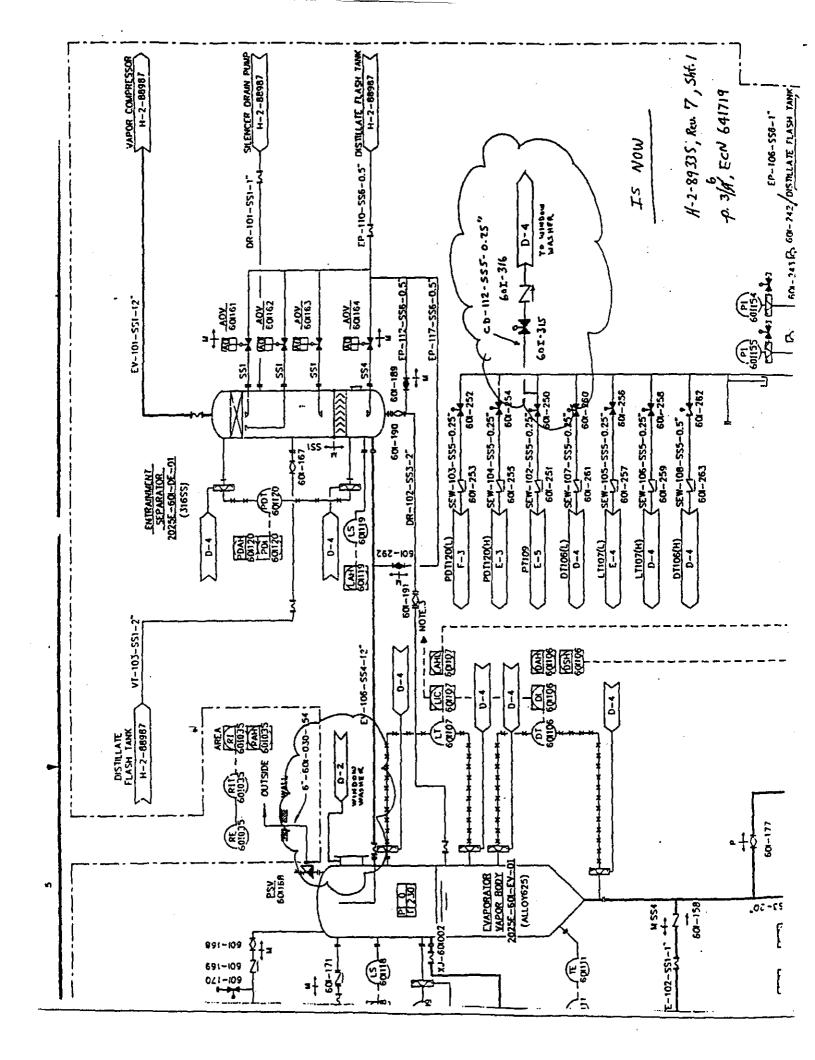


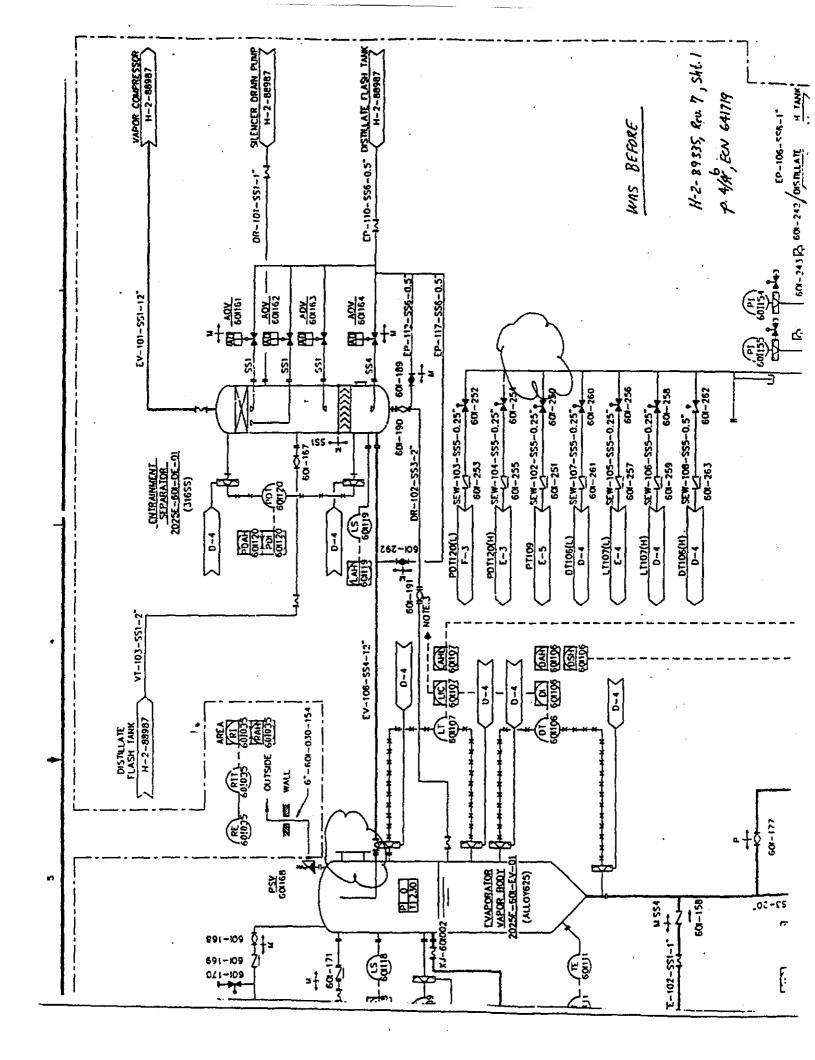
642800 Feb 4 4

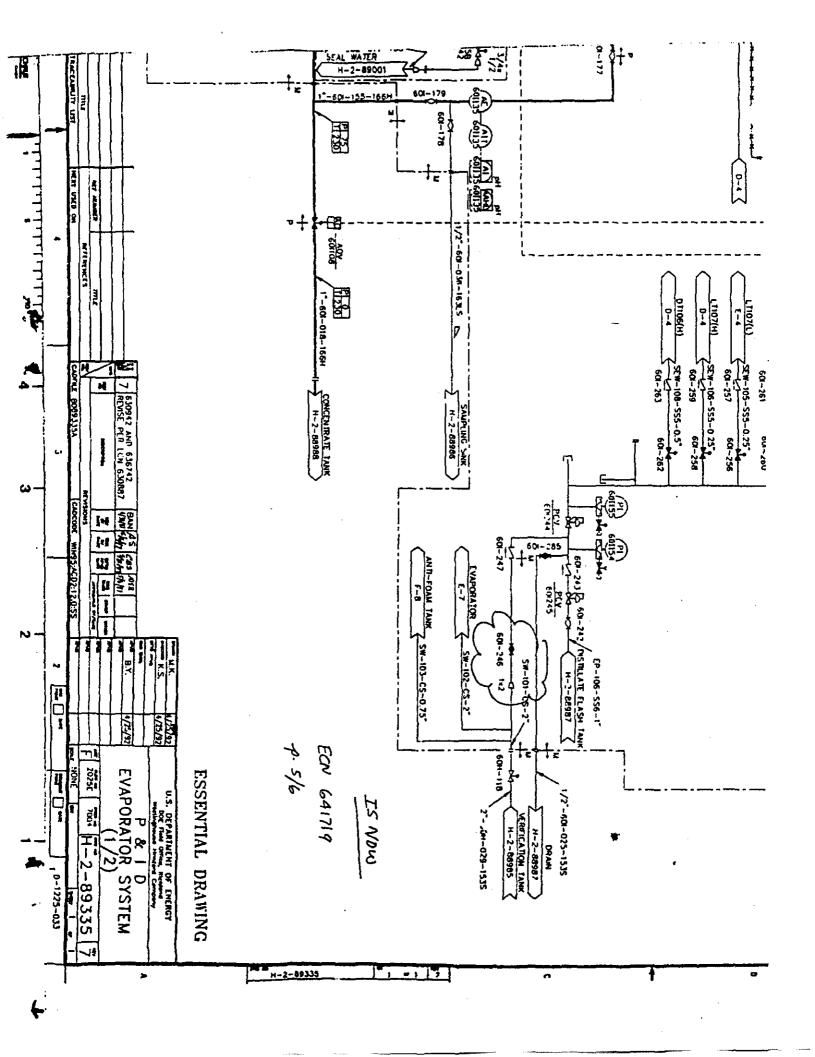
		<u> </u>				<del></del>	
		ENGINEERING C	ESSE HANGE NOTICE	NTI	•	***************************************	641719
	CPF 18			Paga 1	1 of <u>**</u>	Proj. ECN	
	2. ECN Category (mark one)	3. Originator's Name and Telephone No.	, Organization, MSIN,	4. USQ Requ	tred?	5. Date	<del></del>
	Supplemental M Direct Revision D	DE SCULLY/3223	0/S6-72/372-3592		X] No	6/2	/97
	Direct Revision [] Change ECN []	6. Project Title/No.		7. Bldg./Sy		8. Approv	ral Designator
	Temporary [] Standby []		w Washer for ETF orator	20251	E/60I		n/a
	Supersedure () Cancel/Void ()	9. Document Numbers (includes sheet n H=2-89335		10. Related	ECN No(*). ne	11. Relat	ed PO No.
٠	12a. Modification Work	12b. Work Package	12c. Modification Work (		12d. Restor		inel Condi-
	[X] Yes (fill out Bik.	No. EL-97-			tion (lemp.	or Stance	y ECN only)
	12b) [] No (NA Biks. 12b, 12c, 12d)	00425	Design Authority/Cog. Signature & De			sthority/Co	og. Engineer Date
≥ 0	13e. Description of Change Install a SS 316 bl vapor body observat Provide ball valve  System Lead has p Provide "namelly cl	ion window. Ro for operator us roulded design	ute distillate to le in cleaning wind verification (informa	/8" NPT, آ this ring ow. _( حینوی) .	behind the		
3	14a. Justification (mark o				····	<del></del>	
7	Criteria Change [] As-Found []	Design Improvement Facilitate Const	[X] Environmental [] Const. Error/O	[] mission []		ty Deactive Error/Omie	- ::
	14b. Justification Details			***	, .		
7	This window occaise are sloshed up into	nally becomes to the window dur	ogged or obscured ind normal evapora	with brin tor opera	e/suspendo tion. Th	ea soila is windo	is that iw is
ارد	extremely useful, i	f not at times	critical, for moni	toring ev	aporator (	operatio	n. It
_	therefore needs to washer will—allow t	be kept clean t he operator to	or clear observati clean the window a	on of the t will by	evaporati temporari	ing brin ilv open	ie. This ing the
5	ball valve located	near the window	l				
,	15. Distribution (include DE SCULLY, S6-72, 1 DP NELSEN, S6-71, 1 JE GEARY, S6-71, 1 NJ SULLIVAN, S6-72, JL VIGUE, S6-74, 1	RJ HU RS WE BS DA	of copies) ITH, S6-72, 1 IBER, S6-71, 1 IRLING, S6-71, 1 IAKUM, S6-71, 1		DATE: STA:	HANFOI RELEA	3 1997 RD

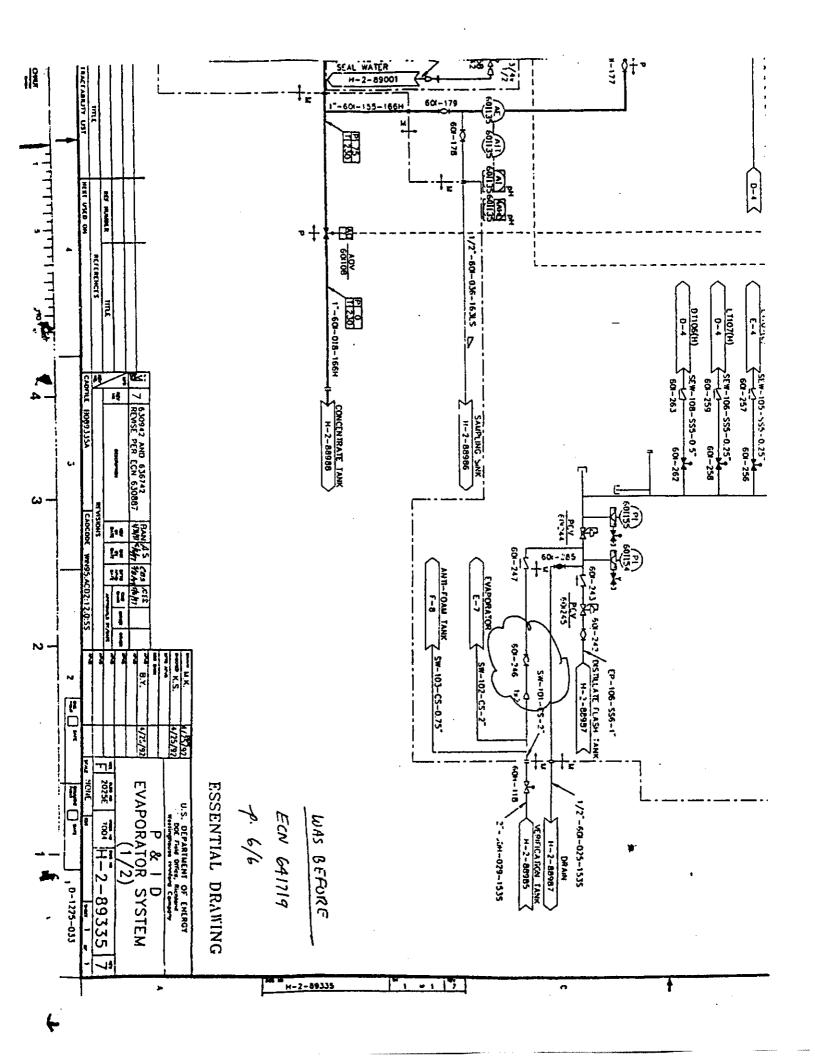
A-7900-013-2 (05/96) GEF095

EA	IGINEERING C	HANGE NOT	ICE	Page 2 of	6 1. ECH (use no 4 641719	. from pg. 1)
16. Design Verification	17. Cost Impact	EERING NA	CONST	RUCTION	18. Schedule Impec	t (days)
Required Di Yes	Additional	f1 S	Additional	[] \$	Improvement	rı
17 %	Sevings	ri s	Savings	11 \$	Delay	ri l
19. Change Impact R	eview: Indicate	the related do	cuments (other then	the engineering	documents identified	on Side 1)
		unge described			cument number in Block Tank Calibration Manual	
Functional Dealgn Criteria		Strees/	Design Report	ij	Health Physics Procedure	
Operating Specification	įj	Interior	e Control Drawing	ij	Spares Multiple Unit List	
Criticulty Specification	[]	Calibret	tion Procedure	Ü	Test Procedures/Specific	
Conceptual Design Repol	٠ []	İnstalla	tion Procedure	ίĵ	Component Index	ii l
Equipment Spec.	()	Mainte	tence Procedure	ĹĬ	ASME Coded Item	ii l
Conet. Spec.	[]	Engine	ring Procedure	[]	Human Factor Considerat	tion []
Propurement Spec.	[]	Operati	ng Instruction	[]	Computer Software	ii l
Vendor Information	[]	Operati	ng Procedure	×	Electric Circuit Schedule	į į
OM Manual	[]	•	onel Safety Requirement	[]	ICRS Procedure	[]
FSAR/SAR	[]	IEFD D	· -	[]	Process Control Manual/I	**** []
Safety Equipment List	[]		angement Drawing	[]	Process Flow Chart	[]
Rediation Work Permit	[]		el Meterial Specification	[]	Purchase Regulation	[]
Environmental Impact St	etement []		oc. Samp. Schedule	[]	Tickler File	[]
Environmental Report	[]		lon Plan	[]		[]
Environmental Permit	IJ		ry Adjustment Request			[][
indicate that t	Documents: (NOTE he signing organi aber/Revision	zation has been	isted below will not n notified of other ocument Number/Revis	effected docume	this ECN.) Signatures nts listed below. Document Number Ro	1
POP-60I-003	1				•	
21. Approvals			<del>-</del>			
	Signature	. 4	Date		gnature On 0 44	-Date
Design Authority DE	£ 0	uly.			scally DEscully	6/2/97
Cog. Eng. DE Scul		<b>7</b> _	6/2/97 P			
Cog. Mgr. NL Sulliv	in affect		6-2-97 Q			
QA Codenii	•			efety		
Safety			•	esign		
Environ. Other				nviron.		
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# ENGINEERING CHANGE NOTICE ESSENTIAL

Pripy			Page	1 61	ECN	·
2. ECM Category (mark one)	3. Originator's Hame and Telephone No.	, Organization, MSIH,	4. USQ Requ	Fred?	5. Date	
	I	0/S6-72/372-3592	[] Yes [	X] No	09/24/99	)
Supplemental [] Direct Revisio []	6. Project Title/No.		7. Bldg./\$y	s./fac. Ho.	8. Approval Design	
Change ECX () Temporary (X)	EVAPORATOR D	H PROBE REMOVED	20256	109/3	NA NA	
Standby () Supersedure ()	9. Document Humbers		10. Related	ECH No(s).	f1. Related PO No.	,
Cancel/Void []	(includes sheet n	no. and rev.) 35, REV 11 S# /	6466	EQ!	. NONE	
	N-2-033.	35, RET 11 7	651		. NORE	
12a. Modification Work	12b. Work Package	12c. Modification Work	Complete		ed to Original Cond or Standby ECW only	
Yes (fill out 81k.	-none-e	1000.11 06	-10-	1	•	•
12b) [X] No (NA Biks. 12b,	EL- 99-00314	1 - V/(-A/	7/99			
DES 9/27/99 12c, 12d)	1082 9/27/99	Design Authority/Cog. Signature & De			uthority/Cog. Engine ignature & Date	1er 
13a. Description of Change	)	13b. Design Baseline	Document? [	X] Yes [	] No	
Evaporator brine pi				recircula	ation line. A	
stainless steel pi	oe plug has been		place.		•	
AIT-60I135, the pH	matar transmitt	left ar has been elect	P L vířesta	ctive	1052 9/24/99	
Att-outso, the bu	Meret ciansmire	er, has been a recu	i tearty T	Jointea.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
The MCS graphic for "out of service."	r the evaporator	brine pH, AI-60I1	35, has b	een alter	ed to indicate	ļ
14a. Justification (mark of Criteria Change [] As-Found [X] 14b. Justification Details	Design Improvement Facilitate Const	[] Environmental [] Const. Error/C	[]		ty Deactivation [ Error/Omission [	_
Enivronmental conditions temperature) are s	itions at the pr			high solid	ds content, hig	gh
Temporary ECN 6466 has been written to in ECN 651583 is "	58L was erroneou o cover the temp work complete."	usly superceded via porary installation	ECN 6515	83. This e permane:	nt modification	n
15. Distribution (include			-72		RELEASE STAMP	1
			-71	SE	P-27 1999	
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A-7900-013-2 (05/96) GEF095

### **ENGINEERING CHANGE NOTICE**

Page 2 of 2

1. ECN (use no. from pg. 1) 653080 L

			<del></del>			
16. Design Verification	17. Cost Impact ENGINE		N/A cons	STRUCTION	18. Schedule Impact (days)	
Required	222	ERIAU Eriau	•	STRUCTION	N/A	
[]-Yes	Additional	() >	Additional	[] }	[ ]	
X No	Savings	[] \$	Savings	[] \$	Delay []	
					documents identified on Side 1 Sument number in Block 20,	)
S0D/D0	[]		lc/Stress Analysis	r1	Tent Calibration Manual	1
Functional Design Criteria	ii i	Strees	/Design Report	ři ·	Health Physics Procedure	i
Operating Specification	ii	Interfa	ce Control Drawing	ii	Spares Multiple Unit Listing	i
Criticality Specification	ří	Calibra	Ition Procedure	ii	Test Procedures/Specification	ij
Conceptual Design Repor	ំ ំំ	Install	stion Procedure	ίi		j
Equipment Spec.	ដែ	Mainte	inance Procedure	ii		j
Conet, Spec.	ii	Engine	ering Procedure	ři		j
Procurement Spec.	i i	Operat	ting instruction	ři	Computer Software	j
Vendor Information	ii	Operat	ting Procedure	ři		j
OM Manual	ři	Operat	tional Safety Regulremen	: រ៉ាំ		j
FSAR/SAR	ដែ	IEFD D	rawing	ří		j
Safety Equipment List	ři	Çeli Ai	rangement Drawing	ří	<del></del>	j
Radiation Work Permit	ii	Essent	tial Material Specification	ii	Purchase Regulation	í :
Environmental Impact St	Itement []	Fac. P	roc. Samp. Schedule	ii	Tickler File	í
Environmental Report	ří	inspec	tion Plan	ří	أ	์ โ
Environmental Permit	ří	Invent	ory Adjustment Request	ii	N/A }	i
Document Num	ber/Revision	J	ocument Number/Revi	1810N	Document Number Revision	
21. Approvals						
}	Signature		Date	Si	gnature A/ Dai	te j
Design Authority D		Wz.	9/24/99	Design Agent DE :	scully No Stully 9/24	199
Cog. Eng. DE Scull		0 00	9/24/99	PE		
Cog. Mgr. NJ Sulliv	an (OSE Mgr) 74/16	full	9-24-99	DA .		
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Safety _				Design	·	
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OSE Lead			<del></del>			
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#### **ENGINEERING CHANGE NOTICE**

Page 1 of <u>8</u>

1.ECN 651583

Proj. ECN

2. ECN Category (mark one)	3. Originator's Name, Organ	nization, MSIN, and Telephone !	No.	4. USQ Required?	5. Date
Supplemental O	S.D. Ellingson F	PDNW 373-1151	į	O Yes   No	8/10/99
Direct Revision O					
Change ECN	6. Project Title/No./Work Or		7. Bidg/Sys	s/Fac. No.	B. Approval Designator
Temporary O	Distillate pH Mon				
Standby O	Installation on E	vaporator Skid		25E ECN No(s).	Q 11. Related PO No.
Supersedure    Output  Description:	Document Numbers Cha sheet no. and rev.)	nged by this ECN (includes	TU. Related	ECH NO(8).	11. Keisted FO No.
CancelVoid O	See block 13a		6	46658L	n/a
12a. Modification Work	12b. Work Package No.	12c. Modification Work Compl	eled	12d. Restored	to Original Condition (Temp. y ECNs only)
Yes (fill out Blk. 12b)	m. 00 00314			0.0.0.00	-
O No (NA Biks. 12b, 12c, 12d)	EL-99-00314	Design Authority/Cog. Engine	ar Signatura	Pesign Author	n/a dtv/Con Engineer Signature &
12c, 12d)	<u> </u>	Date Date	rei Oigilatoia		rity/Cog. Engineer Signature & Date
13a. Description of Change		13b. Design Baseline Docume	nt?  Yes	O No	
	CON Supersede	s ECN-646658L	In It	s Entiret	v!
11113	ocii paperbeae	5 2011 0100002			· .
1. · H-2-89335. Sht	1. Rev 11				
Remove pH moni	tor "AE-601-135"	and instrumentation	from li	ne 1"-60I-15	5-166H as shown on
Page 3 this EG					
	·-·				
2. H-2-88987. Sht	1. Rev 16				
Add pH monitor	"AE-60I-135", in	strumentation and o	rifice E	0-60I-111 to	line EP-103-SS6-1"
-	ige 4 this ECN.				•
·	-				
3. H-2-89183. Sht	1. Rev 4				
Add field refe	erence note to fie	ld of drawing as sh	own on E	Page 5 this E	CN.
Add "Detail 1"	to field of draw	ing as shown on Pag	e 6 this	ECN.	
					_
Review and a	approval of this E	CN by the OSE manag	er const	citutes desig	n review.
See EDT 6018	365 for Orifice Si	zing Design Analysi	s, HNF-4	1940.	
	•				
14a, Justification (mark one)	14b. Justification Details				
Criteria Change	) Monitoring of th	he evaporator disti	llate pX	is required	to prevent
Design Improvement	' I	por compressor inte	rnals.	This design p	package depicts the
ت ` `	ingtallation of	a pH monitor elect	rode ass	embly into 1	ine EP-103-SS6-1"
Environmental (	of the evaporate	or skid piping syst		_	
Facility Deactivation	(1				i
As-Found	Coordinate with	: Set-Values Basis	Document	ECN-653078	
Facilitate Const.		Software ECN-6471	97		
Const. Error/Omission					
Design Error/Omission					
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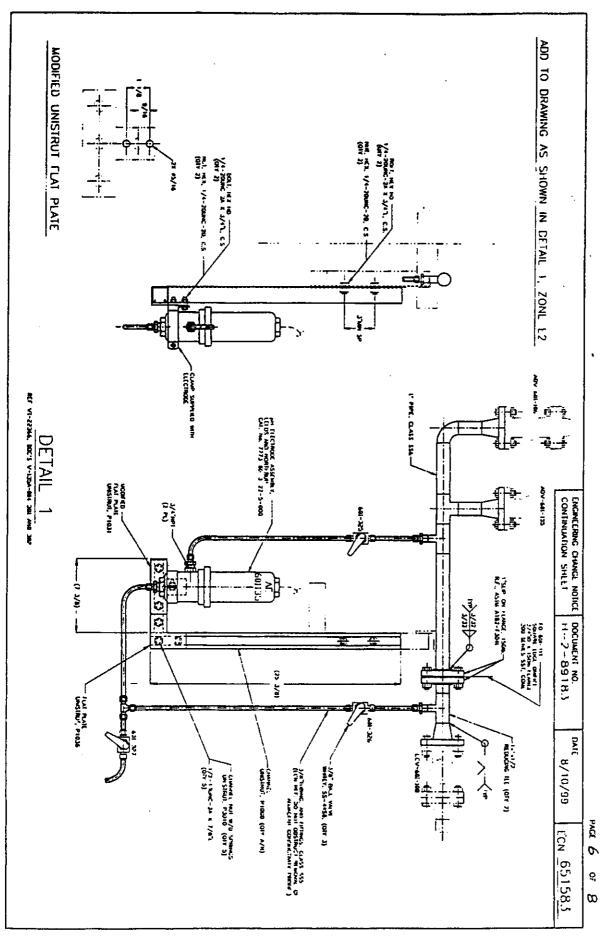
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46	Design Verification	17 Contin							rage z or_		18. Sched	ula Imaga	(day)
10.	Design Verification Required	17. Cost in	-	GINEERING			CC	ONSTRI	JCTION		10. SCHO	ass impact	(asks)
	<b>⊚</b> Yes	Additional	_			Additional	$\cap$	s n/	_	•	Improveme	rst 🔿 1	n/a
	_		-				$\sim$				i '	···	
	O No	Savings		n/a		Savings	<u>.O</u>	\$ <u>n/</u>			Delay	<u> </u>	n/a
19.	Change Impact Reviethe change described	ew; Indicate I in Block 13,	the relati Enter ti	ed documents he affected do	(other than the e cument number i	ingineering ( n Block 20.	gocun	ients id	entified on S	ide 1) that	Will be alled	led by	
	SDD/DD				Seismlc/Stress	Analysis				Tank Cal	ibration Mar	uat	
	Functional Design C	riteria			Stress/Design I	•					hysics Proce		<u> </u>
	Operating Specificat				interface Contro			$\overline{\Box}$			Autiple Unit		ā
	Criticality Specification				Calibration Pro	•		$\overline{\Box}$		•	cedures/Spe	_	
	Conceptual Design F				Installation Pro-			$\overline{\Box}$			ent Index		Ø
	Equipment Spec.				Maintenance Pr	rocedure				•	oded Item		
	Const. Spec.				Engineering Pro	ocedure				Human F	actor Consid	deration	
	Procurement Spec.				Operating Instr					Compute	r Software		$\boxtimes$
	Vendor Information		×		Operating Proc			⊠		•	Circuit Sched	ule	
	OM Manual				Operational Sat		ment	$\Box$		ICRS Pro			
	FSAR/SAR	-	$\overline{\Box}$		IEFO Drawing			⊠			Control Man	ual/Plan	
	Safety Equipment Li	턻			Cell Arrangeme	nt Drawing		ō		Process:	Flow Chart		
	Radiation Work Perm				Essential Mater	_	tion				Requisition		
	Environmental Impai	ct Statement			Fac. Proc. Sam	*				Tickier Fi	•		
	Environmental Repo				Inspection Plan	•				ARP-6	01-001		$\boxtimes$
	Environmental Perm	ĸ			Inventory Adjus	tment Requ	est	$\boxtimes$		HNF-S	D-ETF-O	CD-001	$\boxtimes$
20.	Other Affected Docur	ments: (NOT	E: Dogu	ımenis lisled l	elow will not be i	evised by th	is EC	N.) Sig	natures belo	w indicate	that the sign	ing	<del></del>
	organization has bee			ected docume						B		Mandataa	
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A-7900-013-3 (10/97)

ENGINEERING CHANGE NOTICE CONTINUATION SHEET	DOCUMENT NO. H-2-89335	DATE 8/10/99	ECN 651583
REVISE AS SHO	OWN BELOW IN	CLOUDED ARE	EA. (ZN C4)
	601-178		
WAS	60I-178	pH pH 601135 601135	

ENGINEERING CHANGE NOTICE CONTINUATION SHEET	DOCUMENT NO. H-2-88987, SH1	DATE 8/10/99	ECN_651583
ADD AS SHOWN	BELOW IN CLOU	JDED AREA,	ZN C7
ADV 601106	- - - -	<i>[</i> A	OND COND SH AAH AI AI AI AI AI AI AI AI AI AI AI AI AI
ADV 601105	M ÷ Y - Y - Y - Y - Y - Y - Y - Y - Y - Y	501-326 ) L	FC 601104 CV 01108
pH AAH 601135 - 6011	pH 1 AlT 35 - 601135	<u> </u>	1-284
			,

ENGINEERING CHANGE NOTICE DOCUMENT NO. DATE ECN 651583 CONTINUATION SHEET 8/10/99 H-2-89183 REVISE AS SHOWN BELOW IN CLOUDED AREA. (ZN E6) <u>1/2</u>"X1" ¢EL. 23'−6" 60H-11E FOR pH MONITOR ADDITION THIS AREA, SEE DETAIL 1 काका SEE DETAIL 1 ON DWG. H-2-89185 601 E-2 ¢ 8"-60I-032-154 EL. 23'-3 5/16"



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Page <u>7</u> of <u>8</u>

651583

Date 8/10/99

## ECN Reference Notes. Do Not Add To Drawing

- 1. Piping, fittings and jointing methods for new stainless steel pipe runs are to meet the requirements of ETF piping specification Class 156 (same as RCC spec Class SS6).
- Piping, fittings and jointing methods for new stainless steel tubing runs are to meet the requirements of ETF piping specification Class 153T (same as RCC spec Class SS5).
- 3. Install, inspect and test new piping and tubing in accordance with ASME B31.3-1993 edition and addenda for Category "D" fluid service.
- 4. Salvage existing pipe insulation for reuse to the extent possible. Re-insulate the replaced 1" sch40 piping only. If new material are required, materials shall be:
  - \* Insulation, glass or mineral fiber, 1" thick, block type conforming to ASTM C612, Class 2, or molded pipe type conforming to ASTM C547.
  - \* Aluminum jacket, ASTM B209, alloy 3003, temper H14, ANSI H35.1, .016" thick.
  - \* Stainless steel bands, .020" thick, 3/8" wide, commercial.

Note: All materials may be substituted with engineering approved equal products.

- 5. The design details depicted in this ECN (Page 6) reflect replacement of a short pipe spool piece between valves AOV-60I-105, AOV-60I-106 and LCV-60I-108 in order to incorporate pH monitor installation. Modification of the existing spool piece to incorporate the new tees and orifice flanges only is a field option. Implementation of either approach, ie; complete replacement or modify existing, is the prerogative of the craftsman performing the work.
- 6. Salvage nuts, bolts and washers from existing flanges for re-use during system reassembly.
- 7. Orifice plate FO-60I-111 can be commercially procured or fabricated on site. For either case, orifice handle shall be stamped with 1/8" minimum high characters depicting orifice identification (FO-60I-111), flange size (1"-150#) and internal diameter (.75").

ECN 651583 page 6010

## WMH-331 200 Area Liquid Waste Processing Facilities Administrative Procedures

This is dated material-check electronic file for latest revision.

Rev. 0

03/18/99

Effective Date: May 4, 1998

Page 10 of 11

Authorization Bases Review

ATTACHMENT 2, AUTHORIZATION BASES REVIEW FORM

Part A:	ATTACH	WENT 2, AUTH	ORIZAȚION BA	SES REVIEW FORM	
REFERENCE ITE	M# ECA	651583	<b></b>	Proposed C	hange/Discovery
APPROVAL DESI	GNATOR	<u> </u>	_		
TITLE _	Distillate	pH Monitor	- Installati	on on Evapovator	Skid
DESCRIPTION _	Electrical	assembly n	sill be ius	talled in a new	sly
		•		ed distillate.	<b></b>
_				NE Scully Originator Signature	8/10/99 Date
Part B:		•			
Does the refe	renced item:	•		(chec	k one)
	m a hazard - to the work documented in the Author	irs &/or public beyond the izetion Bases?	t previously analyzed,	NO Yes/Maybe_	
	bility or effectiveness of :	eatures, contrels, procedu	ires, or processes used to	NO Yea/Maybe_	
-	erd not evaluated in the A	uthorization Bases?		NO Yez/Maybe_	•
D. Reflect new Info Authorization Ba	_	de beyond that currently o	decumented in the	NO YearMaybe_	
DETERMINATION  This i		achment 3 for	continuations	^	
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		cted and	1 . 11 11 1	accordance wi	74
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PABI, Item Remains (	No Impa O <u>p</u> en ABR Clos			_	
	Ø			105 Sulls	8/10/99
				Authorization Bases Evaluat	or Date
			Technic	al Support Group Hanager	Date
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	•	•			
		J		J	
This document is	a facility record v	when completed.			Page of

# ENGINEERING CHANGE NOTICE ESSENTIAL

1. ECN 648765

18

CIPF

Page 1 of <u>/O</u>

Proj. ECN

2. ECN Category (mark one)	3. Originator's Name, Or and Telephone No.	ganization, MSIN,	4. USQ Requ	4. USQ Required?			
Supplemental [X]	CARMICHAEL,SL, S6-74, 372-227		[] Yes	[X] No	08/17/98		
Direct Revision [] Change ECN []	6. Project Title/No./World		7. Bidg./Sys./	Fac. No.	8. Approval Desi	gnator	
Temporary []	REMOVE INSTR	JMENTS FROM THIN	2025	E/60J	N/A	-	
Standby []		RYER ROOM		D/ 000	1	·	
Supersedure [] Cancel/Void []	9. Document Numbers Cl		10. Related E	CN No(s).	11. Related PO N	0.	
Cancell Yold []	(includes sheet no. and	·-		4.5			
	1	LOCK 13A		/A	N/A		
12a. Modification Work	12b. Work Package No.	12c. Modification Work Co	mplete		to Original Condi- or Standby ECN only	,	
[X] Yes (fill out Bik.	EL-96-			N/A	n School ECH only	'	
12b)	00561/M			1			
[] No (NA Biks. 12b,		Design Authority/Co		Design	Authority/Cog. Eng	ineer	
12c, 12d)	<u> </u>	Signature &	<del></del>	<u> </u>	Signature & Date		
13a. Description of Change H-2-89364 SH.1 REV		Design Baseline Document?	[X] Yes {]	No	•	1	
REMOVE TEMPERATURE TRANSMITTERS, TT-60J-011, TT-60J-018, TT-60J-020 AND TT-60J038 FROM THE THIN FILM DRYER ROOM AND INSTALL THEM ON THE UPPER DECK OF THE THIN FILM DRYER.  THE TEMPERATURE ELEMENTS FOR THESE TRANSMITTERS WILL REMAIN IN THE THIN FILM DRYER ROOM AT THEIR PRESENT LOCATIONS.  H-2-89364 SH.1 REV.3 & H-2-89319 SH.1 REV.1:  THE HVAC ROOM TEMPERATURE TRANSMITTER WILL BE MOVED TO THE OUTSIDE WALL BY THE STAIRS WITH THE SENSOR REMAINING IN THE THIN FILM DRYER ROOM.  H-2-88989 SH.1 REV.12 & H-2-89364 SH.2 REV.1:  REMOVE FLOW TRANSMITTER FT-60J-035 FROM THE THIN FILM DRYER ROOM AND LOCATE IT ON THE UPPER DECK OF THE THIN FILM DRYER ON THE POLISHER SIDE. THIS REQUIRES CUTTING THE CONDENSATER DISCHARGE LINE TO THE SURGE (1"-60J-145-153S) AND WELDING IN FLANGES FOR THE TRANSMITTER ORFICE PLATE. THE EXISTING ORFICE WILL BE REMOVED AND A SPACER OR SPOOL PIECE INSTALLED.							
14a. Justification (mark one)			••				
Criteria Change []	Design Improvement	[X] Environmental	[]	-	Deactivation	[]	
As-Found []	Facilitate Const	[] Const. Error/O	mission []	Design	Error/Omission	[]	
14b. Justification Details	OU TACTOD CALTO	DAMION OF INCHON	400000	T1/7/11 001/0	DEGUTADA EN	DEPTE.	
CHANGES MADE TO ALI INTO A RADIOLOGICAL			MENTS AND L	IMIT THE .	KEĞOTKED EWJ	ERIES	
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15. Distribution (include name, M	•	<b>L L L L L L L L L L</b>		<del>                                     </del>	RELEASE STAMP		
	66-72 1 66-71 1	J.E.GEARY J.M.ISDELL	S6-71 1 G3-17 1*	K			
	6-71 1 6-72 1	D.E.SCULLY	S6-72 1		4UG-18 19	198	
	6-74 1 *	WCC PLANNING	S6-72 1*	DATE	V		
	66-72 1	R.J.HUTH	S6-72 1	,	T HANFORD	, <sub>10</sub>	
* ADVANCED COPY				8TA:	RELEASE	<b>25</b>	
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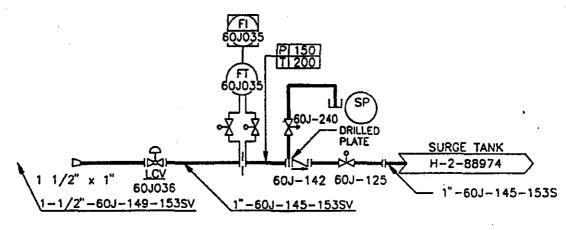
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ENC	JINEERING CI	IANGE NOI			Page 2	01 8/0	648765	
16. Design	17. Cost Impact						18. Schedule Impac	et (days)
Verification Required	ENGINE	ERING	СО	NSTRUC	MOIT		•	
[X] Yes	Additional [N	A] \$	Additional	[NA	} \$	1 1	lmprovement	[NA]
[] No	Savings [N	A) \$	Savings	(NA	) s	]	Delay	[NA]
19. Change Impact Revie	ew: Indicate the related	documents (other	than the engineering	docume	nts klenti	tied on Side	i)	
	y the change described						••	
SOD/OD	[NA]		ess Analysis		[NA]		ank Calibration Manual	[NA]
Functional Design Criteria	[NA]	Stress/Desi	gn Report		[NA]	н	ealth Physics Procedure	[AN]
Operating Specification	[NA]	Interface C	onerol Drawing		[NA]	Sı	parca Multiple Unit Listia	(AN)
Criticality Specification	[NA]	Calibration	Procedure		[NA]	Te	es: Procedures/Specificatio	m [NA]
Conceptual Design Report	[NA]	Ingtallation	Procedure		[NA]	C	ompanent Index	[AN]
Equipment Spot.	[AN]	Maintenano	e Procedure		[NA]	A	SME Coded Item	[NA]
Cores. Spec.	[NA]	Engineering	Procedure		[NA]	н	uman Pactor Consideratio	· ·
Procurement Spec.	[NA]	Operating 1	nstruction		[NA]	c	omputer Software	(NA)
Vendor Information	[NA]	Operating 1	rocedure		[NA]	3	lectric Curcuit Schedule	(NA)
OM Manual	[NA]	Operational	Safety Requirement		[NA]	ıc	RS Procedure	(NA)
FSAR/SAR	(NA)	IEFO Drav	ring		[NA]	Pa	roces: Control Manual/Pla	MA]
Safety Equipment List	[NA]	Call Arrang	ement Drawing		[NA]	Pr	rocess Flow Chart	[AN]
Radiation Work Permit	[NA]	Estemial M	aterial Specification		[NA]	ħ	urchase Requisition	[NA]
Environmental Impact Statement	[NA]	Fac. Proc.	Samp. Schedule		[NA]	Ti	ickler file	(NA)
Environmental Report	[NA]	Inspection	Plan		[NA]			[NA]
Environmental Permit	[NA]		djustment Request		[NA]			[NA]
20. Other Affected Docu	ments: (NOTE: Docum	ments listed below	will not be revised	by this E	CN.) Sig	natures belo	w .	
<ul> <li>indicate that the sign</li> </ul>	ing organization has been				low.			
Document Nu	mber/Revision	Ľ	ocument Number/P	Levision			Document Numb	er Revision
		·						
NONE								•
			<del></del>		<del></del>			
21. Approvals	<b>.</b>		Data			Cianto		Date
	Signature	A- <del></del>	Date	Davies	a Agent		T/n DES	8.17.98
Design Authority D.E.S		nues	8.17.98	PE	ı Ağelli	Mari	d LAI DE 2	<u> </u>
Cog. Eng. D.E.SCULL		1005	8.17.98	QA		<i>V</i> .	•	
Cog. Mgr. N.J.SULLI	AN My Julie	-	8-17-98	Safety			•	<del></del>
QA	• •			Design				· <del></del> ·
Safety			<del></del>	Enviro			4	
Environ.				Other	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
Other	2 mark a		21.2100	Outer				<del></del>
INFORMAL REVIEW ( INFORMAL REVIEW	- Milous		3/17/98					
INFORMAL KEALEM	1. I Canbul		8/17/98	DEPA	RTMEN	T OF ENER	.GY	
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Page 3 of 10

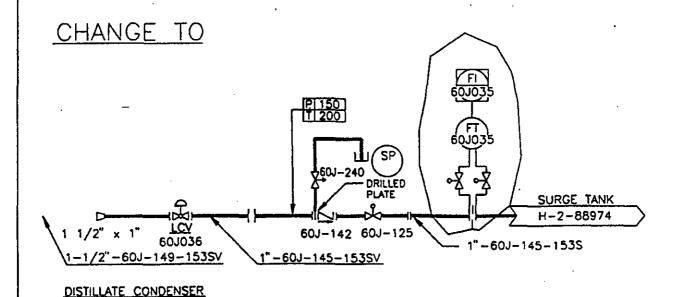
ECN 648765 Dam 08/17/98

H-2-88989

## <u>WAS</u>



DISTILLATE CONDENSER 2025E-60J-CND-01

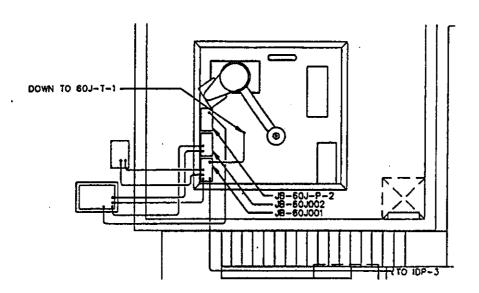


2025E-60J-CND-01

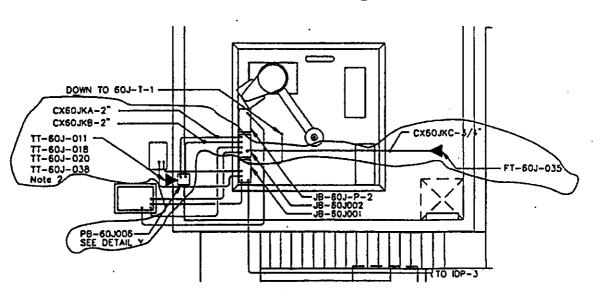
Page 4 of 10

ECN 648765 Date 08/17/98

H-2-89364 Sht.2 <u>WAS</u>



## <u>Change To</u>



## H-2-89364 Sht.2

# WAS

## NOTE:

FOR PULLBOX CONDUIT DETAILS, SEE SHEETS 3 & 4 OF THIS DRAWING.

# CHANGE TO

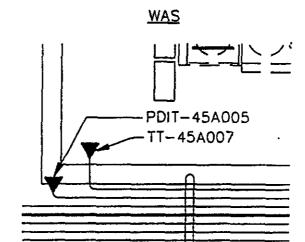
## NOTE:

- 1.) FOR PULLBOX CONDUIT DETAILS, (SEE SHEETS 3 & 4 OF THIS DRAWING.
- 2. TEMPERATURE SENSORS ARE LOCATED INSIDE TFD ROOM.

Page 7 of 10

ECN 648765 Date 08/17/98

H-2-89364 Sht.1

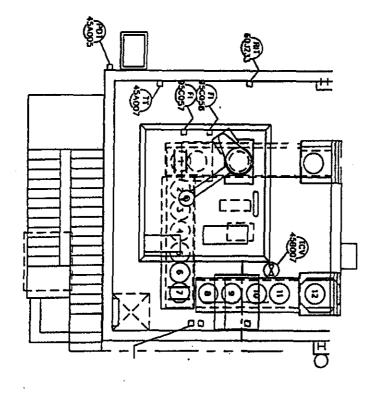


# Change To PDIT-45A005 TI-45A007 (Transmitter on out side wall)

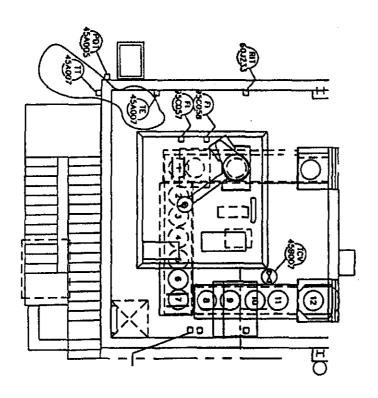
Page B of 10

ECN 648765

Date 08/17/98



H-2-8931 WAS



CHANGE TO

ECN 648765 ENGINEERING CHANGE NOTICE CONTINUATION SHEET. Page 9 of 10 Date 08/17/98 INFORMATION ONLY: Add to the ETF Cable Schedule: CABLE WIRING CABLE TO NO: DIAGRAM LENGTH X60J042 1TSP18 JB-60J002 TT-60J011 INST 20 CX60JKA, CX60JKC RACEWAYS: X60J043 1TSP18 JB-60J002 TT-60J018 INST 20 RACEWAYS: CX60JKA, CX60JKD JB-60J002 TT-60J020 INST 1TSP18 X60J044 20 RACEWAYS: CX60JKA, CX60JKE X60J045 1TSP18 JB-60J002 TT-60J038 INST 20 RACEWAYS: CX60JKA, CX60JKF INFORMATION ONLY: Add to the ETF Raceway Schedule: TO RACEWAY PERCENT: REMARKS FROM RACEWAY LENGTH NO A TYPE (FT) FILL, JB-60J002 PB-60J006 20% CX60JKA C200R 15 CABLES: X60J042, X60J043, X60J044, X60J045 CX60JKB C200R JB-60J002 PB-60J006 15 20% TE-60J011, TE-60J018, TE-60J020, TE-60J038 CABLES: PB-60J006 TT-60J011 5 30% CX60JKC C075R X60J042, TE-60J011 CABLES: CX60JKD C075R PB-60J006 TT-60J018 5 30% CABLES: X60J043, TE-60J018

		NOTICE CONT		Pay	te 10 of 10	Date 08/17/98
K60JKE	C075R	PB-60J006	TT-60J020	5	30%	
ABLES: >	60J044, TE-	60J020				
	C075R	PB-60J006	TT-60J038	5	30%	

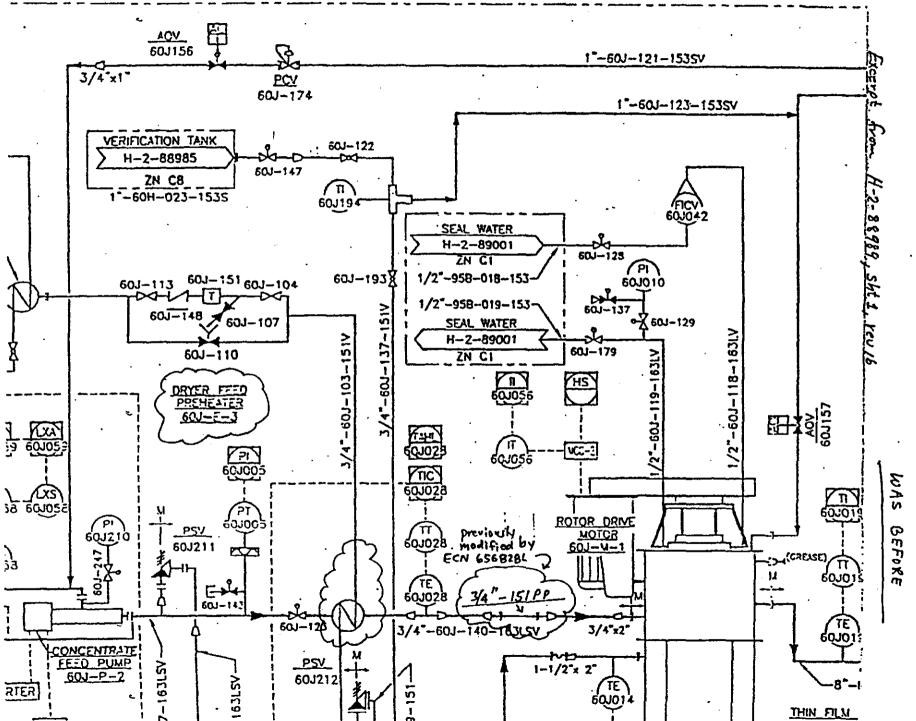
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18,18 N	ENGINEERING (	CHANGE NOTICE	ESSEI	4TIA	1. ECN 65678	B1L
, tr. N					1	
2. ECM Category	3. Originatoria Name	Organization, MSIN,	4. USA Regu	Ired?	5. Date	$\neg$
(mark one)	and Telephone No.		· ·	İ		
a1	DE SCULLY/3M50	0/S6-72/372-3592	[] Yes [	X] No	06/16/00	]
Supplemental [] Direct Revision []	6. Project Title/No.	Alork Order No.	7. Bldg./Sy	./Fec. No.	8. Approval Designato	r
Change ECN ()	-		1 '		''	Ī
Temporary DO		for Dryer Feed	2025	2/000	NA NA	- 1
Standby [] Supersedure []		er 60J-E-3				
Cancel/Vold ()	9. Document Numbers	Changed by this ECH	10. Releted	ECH No(s).	11. Related PO No.	į
	(includes sheet r			1001	NONE	
·		k 13a below	6568		NONE	_
12s. Hodification Work		12c. Medification Work	Complete		ed to Original Condi-	1
	No.			tion (Temp.	or Standby ECH only)	
[X] Yes (fill out Bik.	EL-00-00317					- }
125)	1			) <u> </u>	····	_ l
[] No (MA Bike, 12b,	]	Design Authority/Cog.	Engineer		uthority/Cog. Engineer	
12c, 12d)	<u> </u>	Signature & Di			ignature & Date	
13e. Description of Change	1	135. Design Baseline	Document? [	X] Yes [	[] No	
H-2-88989, sht 1.		-	-	_	-	
Remove dryer feed	<u>.evax</u> orahaztar 60.1-E-	3 Provide a 3/4"	diameter	schedule	40 SS304 screwed	1 I
pipe spool piece for	on the food line	Drovide a 3/4"	diamater	schedule	80 carbon steel	
screwed pipe spool	of the reed time	them line Con a	A of this	c FCN	00 00.00 00	- 1
screwed bibe shoot	biece in rue s	ream ille. See p.	7 01 6111	3 LUII.		1
		(F 501 5 C C-4	B	4	La duvan food	
Install, inspect,	ing test per Abr	E B31.3 for tatego	ry u serv	ice for L	ne dryer reed	ł
line and ASME B31.	i for the steam	line.				
1	_					
H-2-89302. sht 172	<u>rev l</u>			_		
Remove definition	of VD435195 per	page 5 of this ECM	i. This r	emoves al	arms and dryer	
trip on low dryer	feed temperature					- ]
						Ì
HNF-SD-ETF-OCD-001	. rev 5. Table 1	19. p. 48 For TIC-	-60J028, d	elete "AL	: 100 'F Alarm -	- 1
Stop Concentrate F	eed Pump."		•			
14a. Justification (mark						
Criteria Change [X]	Design improvement	[] Environmental	[]	Facili	ty Deactivation []	- 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- •		==		Error/Omission []	- 1
As-Found	Facilitate Const	[] Const. Error/	MISSION [	Design	ELLON/ORISSION	
14b. Justification Details						
The dryer feed pre	heater 60J-E-3 1	is plugged with so	ligified d	ryer teed	23182	.
precipitated from	the groundwater	feed. This is like	cely the r	esult of	accama ration over	^
years of operation	. From a proces	ss standpoint this	equipment	1s deeme	d non-essential	
and can be tempora	rily removed.					- 1
1	•	•				
_					•	
	name Math and an i	of gories)		1	RELEASE STAND	<b>=</b> ₹:
15. Distribution (Include	news, note, end no. 1	E Scully S6-72	1*	1	<b></b>	
MC Teats S6-				1 ,	1100 <b>%</b> a <b>Pull</b>	
NJ Sullivan S6-	· <del>-</del>	Willett S6-71	1*	1	ANT TO THOU	1
MW Bowman S6-		D Skogley S6-72	1.	DATE	HANFORD	
WPP Planning		M Isdell B4-39	1*	8TA 34	RELEASE } ID{	7A)
DL Flyckt S6-		L Foster S6-71	1		1	IJ
RW Szelmeczka S6-		*adv cy	3	1	<b>~</b>	7
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### **ENGINEERING CHANGE NOTICE**

Page 2 of 5

1. ECH (use no. from pg. 1) 656781L

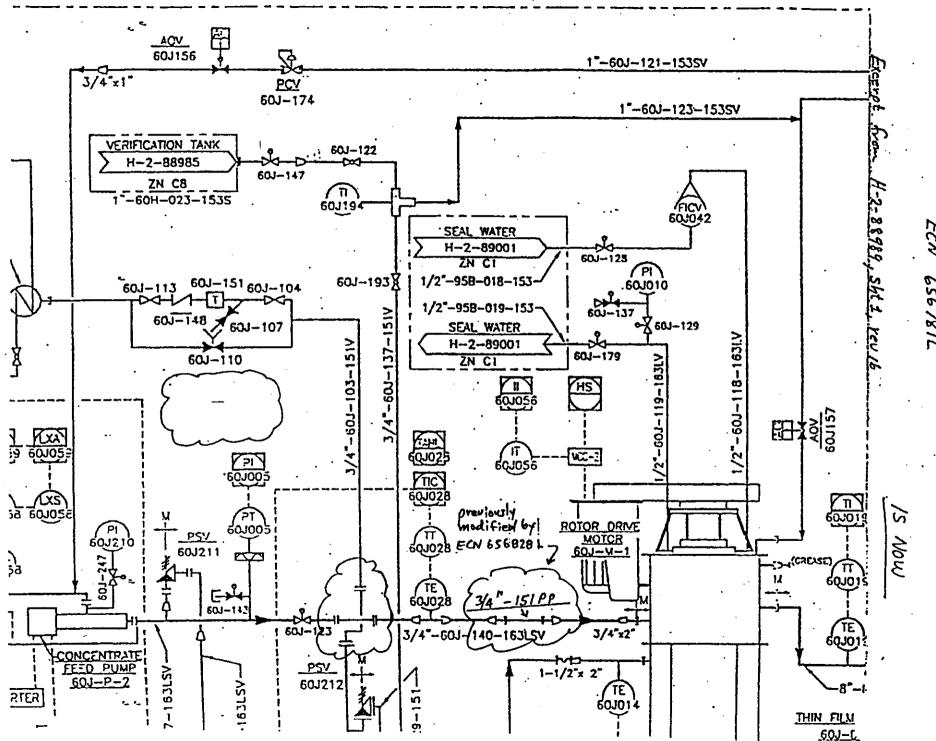
16. Design	17. Cost Impact			<del></del>	18. Schedule Impac	· /dayas
Verification	ENGINE	\$	N/A CONS	TRUCTION	10. Schedule Impac	( (ceys)
Required	Additional	E1 C	Additional	(1) ¢	Improvement 1	•
[X] Yes	Sevings	[] *	Savings	[] *	Delay	
10 Change Impact 2	<u> </u>	1 <b>3</b>		1 3	ng documents identified o	<u></u>
that will be at	fected by the chan	ge described	in Block 13. Enter	r the affected	document number in Block	n side 1) 20.
\$00/00	[]	Beler	nic/Stress Analysis	[]	Tank Calibration Manual	D
Functional Design Criteria	· [j	Stree	e/Design Report	Ü	Health Physics Procedure	ĹĬ
Operating Specification	Ü	interi	less Control Drawing	ĬĬ	Spares Multiple Unit Listic	• [j
Criticality Specification	ĬĬ	Calib	ration Procedure	ĨĬ	Test Procedures/Specifics	
Conceptual Design Repor	t (j	Insta	liation Procedure	Ü	Component Index	ĬĬ
Equipment Spec.	Ü	Main	tenence Procedure	ίi	ASME Coded Rem	ξĬ
Conet. Spec.	[]	Engle	eering Procedure	ij	Human Factor Considerat	
Procurement Spec.	Ü	Oper	ating instruction	Ü	Computer Software	ĬĨ.
Vendor Information	ij	Oper	sting Procedure	ĸ	Electric Circuit Schedule	ii.
OM Manual	ti	Open	etional Safety Requirement		ICRS Procedure	ii
FBAR/SAR	ĨĴ	NEFD	Drawing	ĨĨ	Process Control Manual/P	len []
Safety Equipment List	Ü	Cell /	Arrangement Drawing	ίi	Process Flow Chart	ij
Rediction Work Permit	ĹĴ	Esse	ntial Material Specification	ij	Purchase Regulation	ĬĬ
Environmental Impact Str	rtement []	Fac.	Proc. Samp. Schedule	ΪĬ	Tickler File	ij
Environmental Report	Ü	Inspe	etion Plan	ĨĴ		ίi
Environmental Permit	ίi	Inven	tory Adjustment Request	ΪĨ		ii
POP _ 605 - 0	ber/Revision DOI, Q-10		Document Humber/Revi	ision	Document Number Re	vision
21. Approvals	·			<del></del>		
	Signature /	n #	Date	•	Signature 0 4/	Date
Design Authority 8	" Willets	(UU)	P/1P/00 1	Design Agent D	E Scully Defully	6/16/00
Cog. Eng. ST Wille	77770	YMN,	8/18/2	PE	•	
Cog. Mgr. NJ Sulliv	on may be	<b>-</b>		ON .		
ev.	<b>V</b> -			Safety		
Safety			<del></del>	Design		
Environ. —				Environ.	- 12402	· 
Other	Art He	•		Other (MCS Co	y. Engr.) MCBLAT	6/16/00
Design Verification / THERMM REVIEW	in)		6.16.00			
			<del></del>	DEPARTMENT OF E	<u>NERGT</u>	
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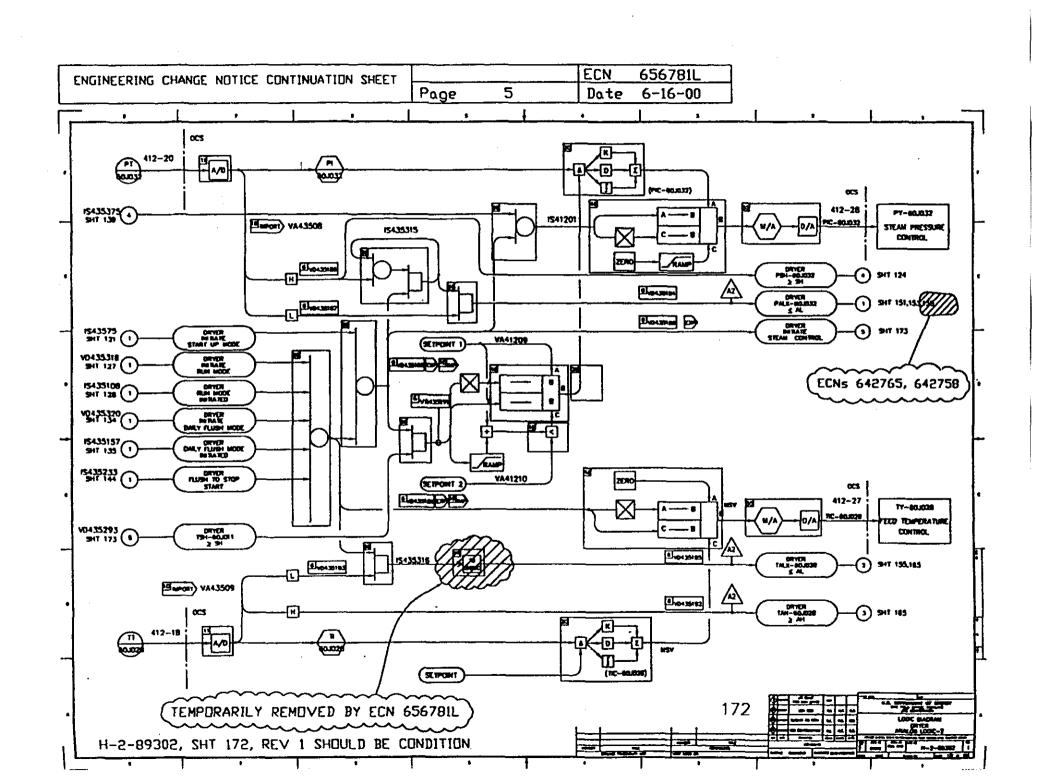


ECN 656781L

p. 3/5

60J-D-





## ENGINEERING CHANGE NOTICE

1. ECH - - C14443

W-291H-0-15

			FILL D.			· •		
2. ECH Category (mark one)	3. Originator's Nam	3. Originator's Name, Organization, MSIN, and Talaphone No. 4, D.						
	Joe Murphy, IC	F KH, ER & SW, G3	9-19-94					
Supplemental [X] Direct Revision · []	5. Project Title/No	./Work Order No.	6. Bldg./Sys.	/fac. No.	7. Approval	Designator		
Change ECN [] Temporary []		AREA BAT/AKART	ETF TRUC			₹/A		
Standby [] Supersedure []		ENTATION	IN FAC	ILITY		·		
Cancel/Void	(includes sheet s	Charged by Extra Fort	9. Related Ed	Mo(s).	10. Related	I PO No.		
	H-2-817969 H-2-817	SHT 1,2,3,4,5) c	W291H-	Ø+10	N	I/A/SC/3		
		Spec. W-291H-C2)		sia 967/4				
114. Hodification Work	11b. Work Package	11s. Modification Work	Complete		ered to Original or Standay			
[] Yes (fill out Blk. 11b)	INVINI	N/A			H/A	····,		
[] No (NA Biks. 11b, unknown 11c, 11d)	UNKNUWN	UNKNOWN  Cog. Engineer Signature & Dete Cog. E				ngineer Signature & Date		
12. Description of Change	000 CIT 1	,		,		SC/3 ·		
ITEM 1: DWG H-2-817 a. ZONE C-4; Change		ine and add line	as shown i	n sketch	on page 5	<b>.</b>		
ITEM 2: DWG H-2-817	969 SHT 2	•				·		
a. Zone DE-3,4; Cha		f line L-1 and ad	d 4" line a	as shown	in sketch	on -		
b. Zone AB-7; Chang	e 6. e and add line	to profile as sho	m in sketo	-h on nao	e 7.	۱۹۲۰مهای		
:. Zone D-7; Change	notes as shown	in sketch on pag	e 8.	v peg	ĵ.	الحرام المراهد		
d. Zone B-6; Change	detail as show	n in sketch on pag		ted ECH:	W291H-P/1	0		
e. Zone B-1; Change	note 3 to read	as follows:		n		550 05		
the spec.	ipe for line L-	l shall be IAW pi	De Code A C	r b or s	ection UZ	ים טכס		
one speci						·		
SEE CONTINUATION SH				<u>,</u>	·····			
13e. Justification Crit (mark one)	teria Change []	Design Exprovement	[X]	Environment	tal	[]		
As-Found [X] Faci	litate Const. [X]	Const. Error/Omiss	on []	Design Erro	or/Omission	[X]		

13b. Justification Details
See Continuation Sheet Page 4.

14. Distribution (include name, MSI)	, and no. of copies)		RELEASE STAP
UHC DISTRIBUTION Project Files R1-28 M. C. Arntzen Jr. L4-93 J. K. Epperley R1-29	J. D. Fulcher O. M. Jaka E. A. McNarma K. S. Pedersen (COG) J. H. Rasmussen B. T. Tabayoyon R. L. Veilleux	S2-32 R3-08 K6-90 R3-35 T6-20 R3-35 T3-28	OFFICIAL RELEASE 5 BY WHC DATE SEP 27 1994

<sup>-7900-013-2 (06/94)</sup> GEF095

FNO	MEEDING C		1. ECH (use n	0. 1:00 pg. 1)		
ENGI	NEERING C	Page 2 of A	0 W291H-071	5 9/21/44		
15. Design Varification	16. Cost Impact				17. Schedule Impa	ct (days)
Required		KEERING .		CTION		
[] Tes	Additional Savings	į, , φ	- Additional Savinos	[] \$5K	Improvement	11 2/2
No Share Image		she pelased dec		1) 3	locupents identified	00 \$ide 13
that will be af	fected by the chi	ange described i	n Block 12. Enter t	the affected docu	zent number in ≇lock	: 19.
\$00/00	[]		c/Stress Analysis	, []	Tank Calibration H	enner []
Functional Design C	riteria []	Stress	/Design Report	[]	Health Physics Procedure	[]
Operating Specifica	tion []	Interf	ace Control Drawing	[]	Spares Multiple Un Listing	it []
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Conceptual Design R	eport []	Instal	lation Procedure	[]	Component Index	[]
Equipment Spec.	Ĭ	Meinte	nance Procedure	ij	ASME Coded Item	Ü
Const. Spec.	įj	Engine	ring Procedure	ij	Numer Factor Consideration	ίi
Procurement Spec.	[]	Operat	ing Instruction	[]	Computer Software	[]
Vendor Information	ij	Operat	ing Procedure	ij	Electric Circuit Schedule	រ៉ៃ
OH Manual	[]	Operati Require	ional Safety	[]	ICRS Procedure	[]
FSAR/ŞAR	[]	IEFO D		[]	Process Control Kanual/Plan	[]
Safety Equipment Li:	et []	Cell A	rrangement Drawing	[]	Process Flow Chart	[]
Radiation Work Perm			ial Material Ication	Ü	Purchase Requisition	× []
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20. Approvals						•
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Page 3 of 10

ECH W-291H-0+15

Date 9/19/94

2. DESCRIPTION OF CHANGE CONT.

ITEM 3: DWG H-2-817969 SHT 3

a. Zone B-6,7; Remove gate and change notes as shown in sketch on page 9.

TTEM 4: DWG H-2-817969 SHT 4

a. Zone DEF-1,2,3,4; Remove TYP FENCE DETAIL and associated NOTES.

ITEM 5: DWG H-2-817969 SHT 5

a. Zone C-6; Add conduit to detail as shown in sketch on page 10:

ITEM 6: DWG H-2-817975 SHT 1

a. Zone C-1; Change note 6 to read as follows:

6. Pumps shall be supplied by ICF KH and installed by the Contractor IAW manufacturer's recommendations.

ITEM 7: CONSTRUCTION SPECIFICATION W-291H-C2, SECTION 02831 a. Delete Section 02831, Chain Link Fences and Gates.

ITEM 8: CONSTRUCTION SPECIFICATION W-291H-C2, SECTION 02831

A. Pipe Code A: Delete, FLEXIBLE COUPLINGS: COMPRESSION TYPE SLIP ON STEEL; DRESSER TYPE 38 OR 138.

b. Pipe Code C: Add, FLEXIBLE COUPLINGS: COMPRESSION TYPE SLIP ON STEEL; DRESSER TYPE 38 OR 138.



894/SIG 9127/91

## ENGINEERING CHANGE NOTICE CONTINUATION SHEET

Page 4 of /0

W-291H-2-15 ECN 9/19/94 Date

13b. JUSTIFICATION DETAILS

#### ITEM 1:

a. AF, Sanitary Water line must be moved to avoid leak detection risers installed by project C-018. 4" lined installed by project C-018 is added.

#### ITEM 2:

a. AF, Same as Item la.

b. AF, 4" line installed by C-D18 crosses line L-2 and is added to profile. c. DI, Redundancy in note is removed.

d. FC, Pipe material as called out on the drawing made fabrication of pipe expensive and time consuming.

#### ITEM 3:

a. AF. Fence is no longer necessary, therefore installation of a gate is not needed.

a. AF, Fence is no longer necessary, therefore the installation of a gate is not needed.

#### ITEM 5.

a. DE/O, Conduit penetration was left off of detail.

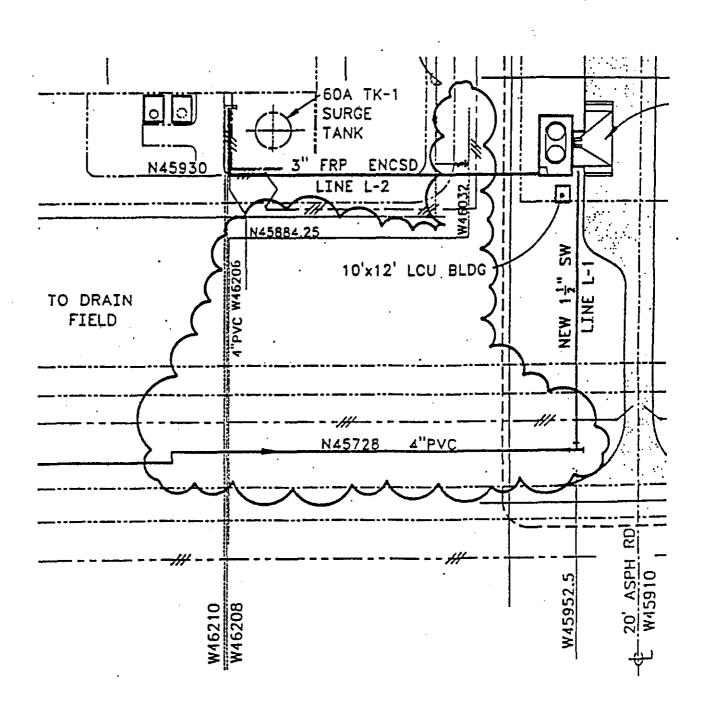
a. DI, Pump installation note is made more clear.

a. AF, Same as Item 3a and 4a.

#### ITEM 8:

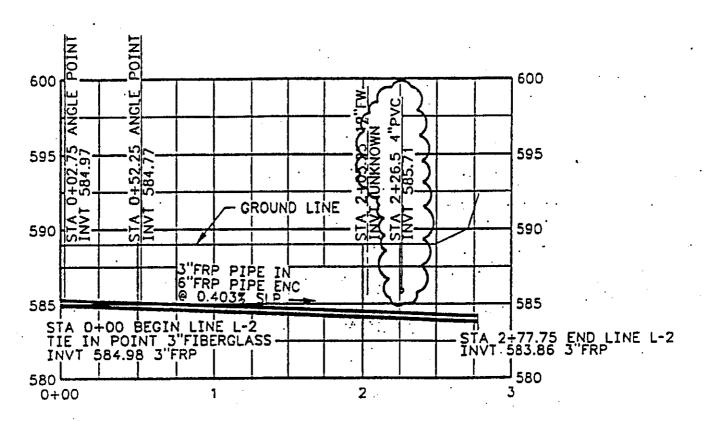
a. FC; Because of Item 2d, Compression Coupling is no longer needed in Pipe Code A and is needed in Pipe Code C.

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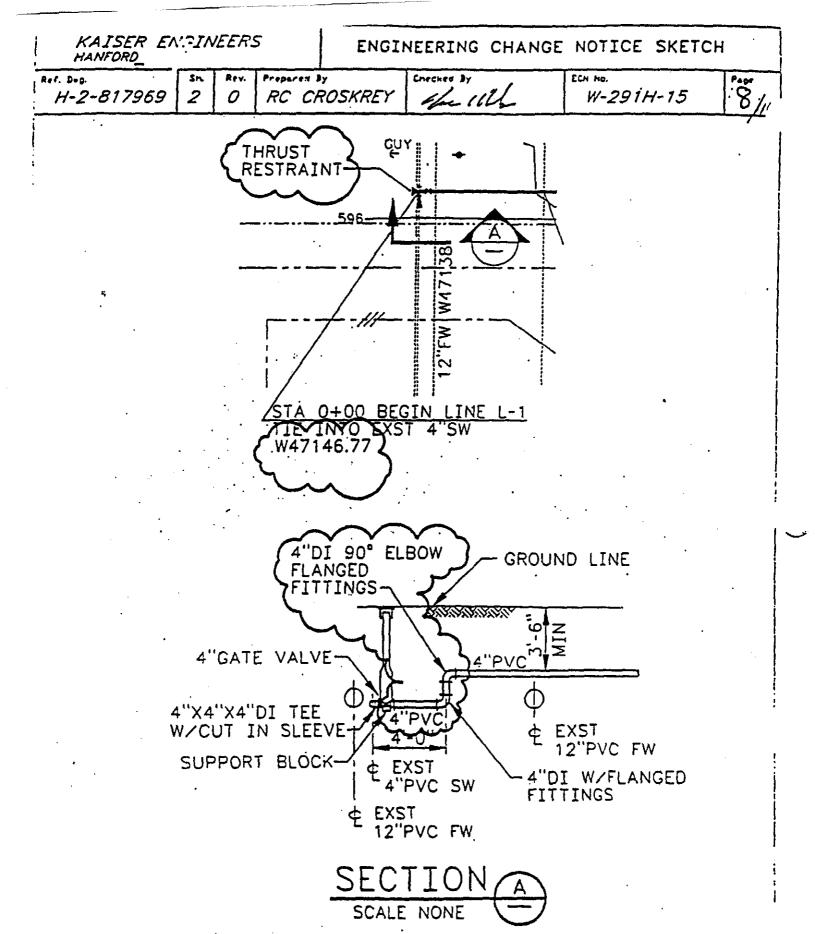
KAISER ENGINEERS ENGINEERING CHANGE NOTICE SKETCH HANFORD ECH No. Ref. Deg. Aev. Prepared By Checked By Page H-2-817969 2 0. fac ((h) .RC CROSKREY W-291H-15 6 T9 SEE TABLE H-2-817969 STA 2+26.5 4"PVC STA 2+03.25 이이 12"FW STA 14+05.97 ENO LINE L-1 INVT 587,00 . N45932.697 W45952.50 SEE NOTE 7 a 593 EXST 20' GRAVEL ROAD STA 9+00 ANGLE POINT 593 W45952 W46000 77 0+00 11

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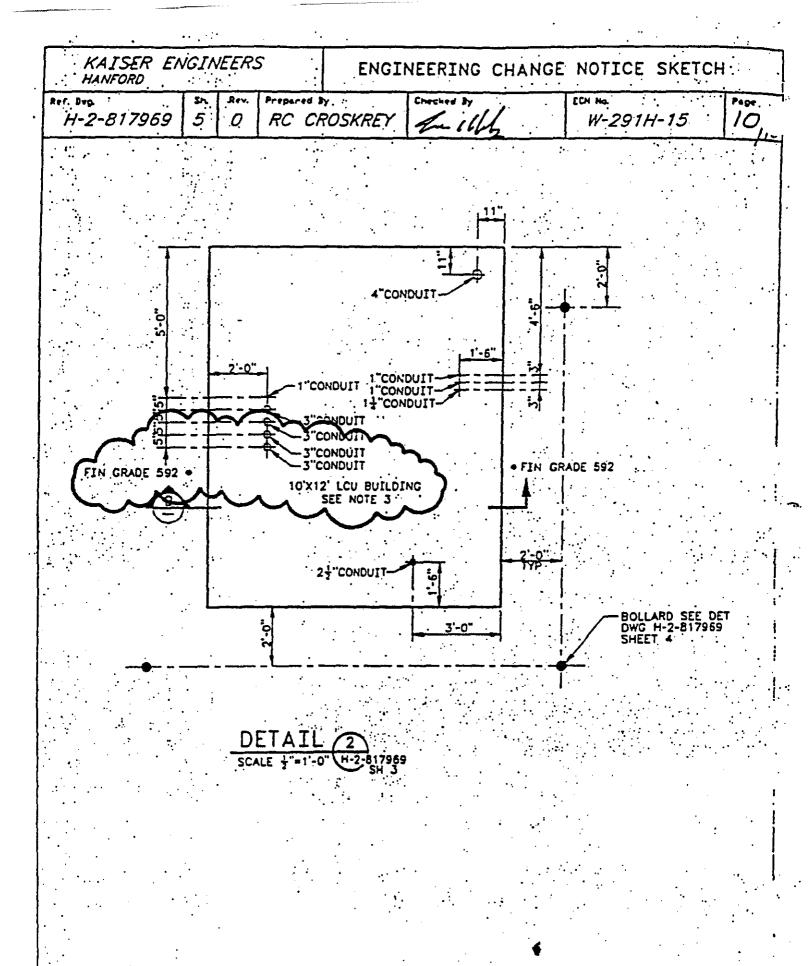


# PROFILE LINE L-2

SCALE VERTICAL 1"=5" HORIZONTAL 1"=50"



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# ESSENTIAL

1.ECN 641703

Page 1 of 24

Proj. CPF 4. USA Required? 5. Date 2. ECN Category 3. Originator's Name, Organization, MSIN, and Telephone No. (mark one) RN Wagner/32200/S6-71/376-4460 [] Yes [X] No May 13, 1997 **Supplemental** [X] 8. Approval Designator Direct Revision 6. Project Title/No./Work Order No. 7. Bldg./Sys./Fac. No. Change ECN [] Misc. Mods and As-Builts for 2025E/59A.60M/ NA Temporary Standby () ETF Load-In Station 200 Area ETF Supersedure [] 10. Related ECN No(s). 11. Related PO No. 9. Document Numbers Changed by this ECH Cancel/Void (includes sheet no. and rev.) See Block 13A N/A NA 12s. Modification Work 12b. Work Package 12c. Modification Work Complete 12d. Restored to Original Condition (Temp. or Standby ECN only) ... No. EL-96-00208. [X] Yes (fill out Blk. EL-97-00343 126) [] No (NA Blks. 12b, Design Authority/Cog. Engineer Design Authority/Cog. Engineer 12c, 12d) \$ignature & Date Signature & Date [] No 13b. Design Baseline Document? 13a, Description of Change This ECN implements the following changes: Remove flow orifice in System 60M transfer line from Load-In Station. As-build sample valve and tanker vent valving. Add drain lines and valves to Load-In Station pump cases. Add bell-reducer funnels and valving to suction of Load-In Station pumps. Replace "Facility" with "Station" in all Load-In drawing titles. Identify status of Load-In Station drawings to Essential or Support. Piping, fittings and jointing methods to meet the requirements of Hanford Site piping specification Class M-9. Install, inspect and test the new piping installation in accordance with ASME B31.3 and Addenda for Category D fluid service. (Block 13a continued on Page 3) 14a. Justification (mark one) Design Improvement [X] ſ1 Environmental facility Desctivation Criteria Change [X]Facilitate Const Const. Error/Omission Design Error/Omission As - Found 14b. Justification Details Remove flow orifice in transfer line from Load-In Station to increase flow rate. As-build sample valve and tanker vent valving for configuration control. Add drain lines and valves to Load-In Station pump cases for improved contamination control.

Add beli-reducer furnels and valving to allow priming of Load-In Station pumps.

Replace "facility" with "Station" in drawing titles to reflect the status of the Load-In Station as part of the 200 Area ETF, rather than a stand-alone facility. Identify status of Load-in Station drawings to Essential or Support, as appropriate. PLEASE STA 15. Distribution (include name, MSIN, and no. of copies) N. J. Sullivan S6-72 R. J. Nicklas \$6-72 \$6-71 \$6-71 A. K. Yoakum \$6-71 J. E. Geary \$6-74 S. P. Biglin\* R. N. Wagner\* E. A. McNamer\* \$6-74 BAPE \$6-74 C. M. Towne HANFORD \$6-74 8. S. Derling \$6-72 J. L. Vigue

56.71

D. P. Nelsen

Stations 3/4/5/15/16/30

**ENGINEERING CHANGE NOTICE** 

J. F. Berger

T. W. Dallas (\* Advance Copies)

56.74

56-71

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Date 5/13/97

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Documents changed by this ECN (also see attached drawing changes):
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H-2-88766, Sheet 4, Rev. 2
H-2-88779, Sheet 4, Rev. 0
H-9-203. Sheet 1. Rev. 0
H-9-203. Sheet 4. Rev. 0
H-2-817968, Sheet 1, Rev. 1*
H-2-817969, Sheet 1, Rev. 1*
H-2-817969, Sheet 2, Rev. 1*
H-2-817969, Sheet 3, Rev. 1*
 H-2-817969, Sheet 4, Rev. 1*
H-2-817969. Sheet 4, Rev. 1*
H-2-817969. Sheet 5, Rev. 1*
H-2-817970. Sheet 1, Rev. 1*
H-2-817971. Sheet 2, Rev. 1*
H-2-817971. Sheet 1, Rev. 1*
H-2-817972. Sheet 1, Rev. 1*
H-2-817973. Sheet 1, Rev. 1*
H-2-817974. Sheet 1, Rev. 1*
H-2-817974, Sheet 1, Rev. 2*
H-2-817975, Sheet 1, Rev. 1*
H-2-817975, Sheet 1, Rev. 1*
H-2-817976, Sheet 1, Rev. 1*
H-2-817977, Sheet 1, Rev. 1*
H-2-817980, Sheet 1, Rev. 1*
H-2-817981, Sheet 1, Rev. 1*
H-2-817981, Sheet 2, Rev. 1*
H-2-817981, Sheet 3, Rev. 1*
 H-2-817981, Sheet 3, Rev. 1*
 H-2-817981, Sheet 4, Rev. 1*
H-2-817981, Sheet 5, Rev. 1*
H-2-817983, Sheet 1, Rev. 0*
H-2-817983, Sheet 2, Rev. 1*
H-2-817983, Sheet 3, Rev. 0*
H-2-817983, Sheet 4, Rev. 1*
H-2-817983, Sheet 5, Rev. 0*
H-2-817983, Sheet 6, Rev. 1*
H-2-817983, Sheet 6, Rev. 1*
H-2-817983, Sheet 7, Rev. 0*
H-2-817983, Sheet 8, Rev. 0*
H-2-817985. Sheet 1. Rev. 1*
H-2-817985, Sheet 2, Rev. 1*
H-2-817987, Sheet 2, Rev. 1*
H-2-817987, Sheet 1, Rev. 1*
H-2-817987, Sheet 3, Rev. 1*
H-2-817988, Sheet 4, Rev. 1*
H-2-817988, Sheet 1, Rev. 1*
H-2-817988, Sheet 2, Rev. 1*
H-2-817988, Sheet 3, Rev. 1*
 H-2-817989, Sheet 1, Rev. 1*
H-2-817990, Sheet 1. Rev. 1* H-2-817991, Sheet 2, Rev. 1*
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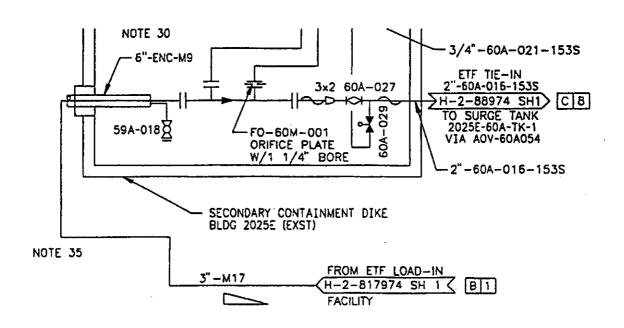
<sup>(\*</sup> Title and/or Essential/Support status is changed for these drawings per this ECN.)

Page H of 24

ECN 641703 Date 5/13/97

H-2-88766, Sheet 4, Rev. 2, Zone D-2

IS:

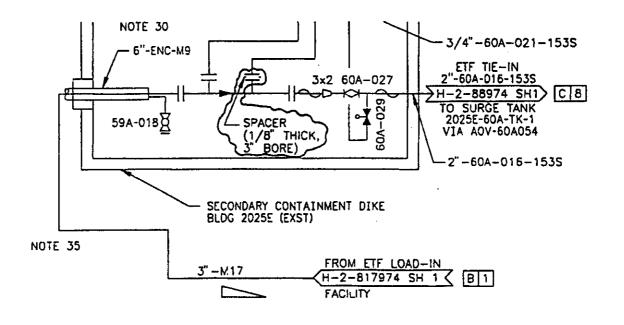


Page 5 of 24

ECN 641703 Date 5/13/97

H-2-88766, Sheet 4, Rev. 2, Zone D-2

**CHANGE TO:** 

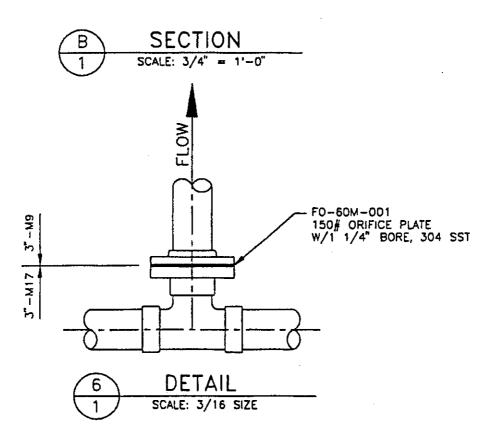


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ECM 641703 Date 5/13/97

H-2-88779. Sheet 4, Rev. 0. Zone B-2

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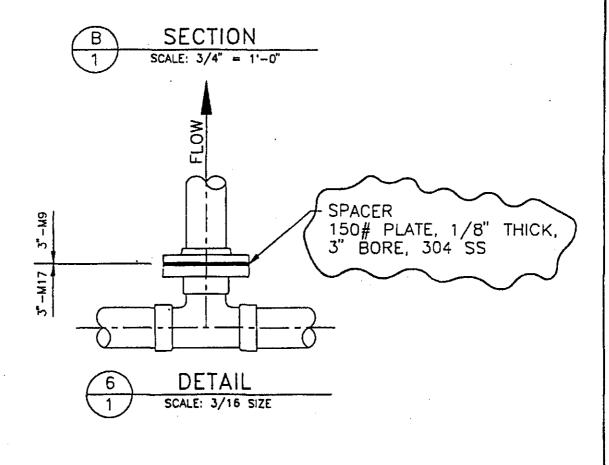


Page 7 of 24

ECN 641703 Date 5/13/97

H-2-88779, Sheet 4, Rev. 0, Zone B-2

**CHANGE TO:** 

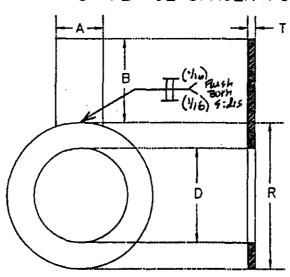


Page 8 of 24

ECM 641703 Date 5/13/97

Sketch for 3" spacer shown in above changes to H-2-88779 and H-2-88766

# 3" FLANGE SPACER FOR ECN 641703



T = 1/8" PLATE THICKNESS

A = 2" (APPROX) B = 3" (APPROX)

 $D = 3.00^{\circ} + / - .05^{\circ}$  $R = 5.25^{\circ} + / - .05^{\circ}$ 

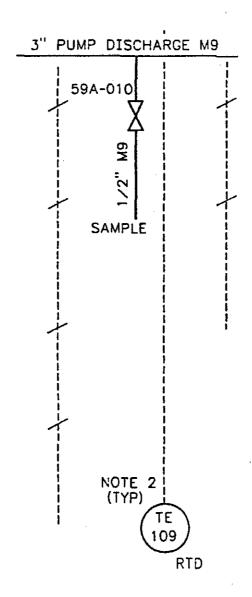
MATERIAL = 304SS FLANGE CLASS = 150 LB

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ECH 641703 Date 5/13/97

H-2-817974. Sheet 1. Rev. 2. Zone C-5

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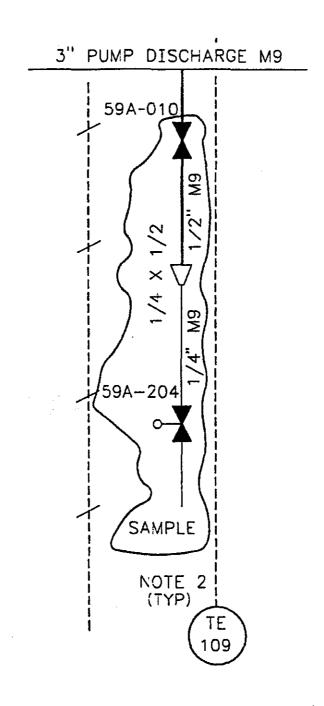


Page 10 of 24

ECH 641703 Date 5/13/97

H-2-817974. Sheet 1. Rev. 2. Zone C-5

**CHANGE TO:** 

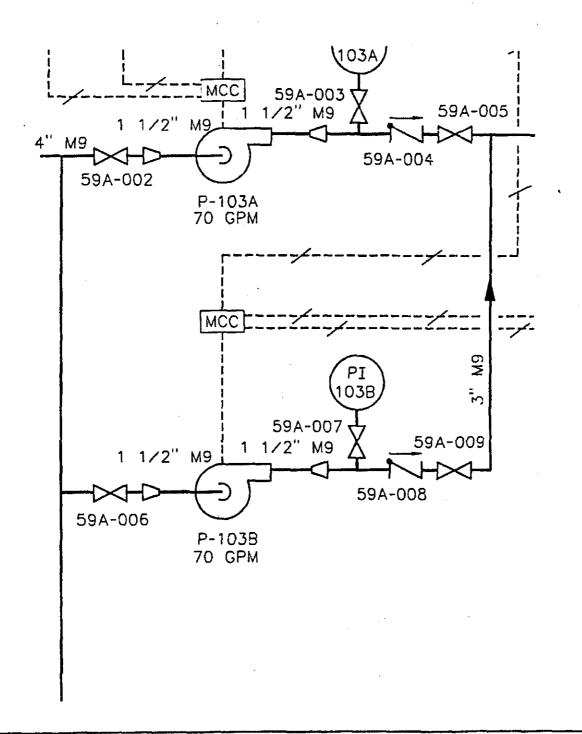


Page II of 24

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H-2-817974. Sheet 1. Rev. 2. Zone C-7 to D-7

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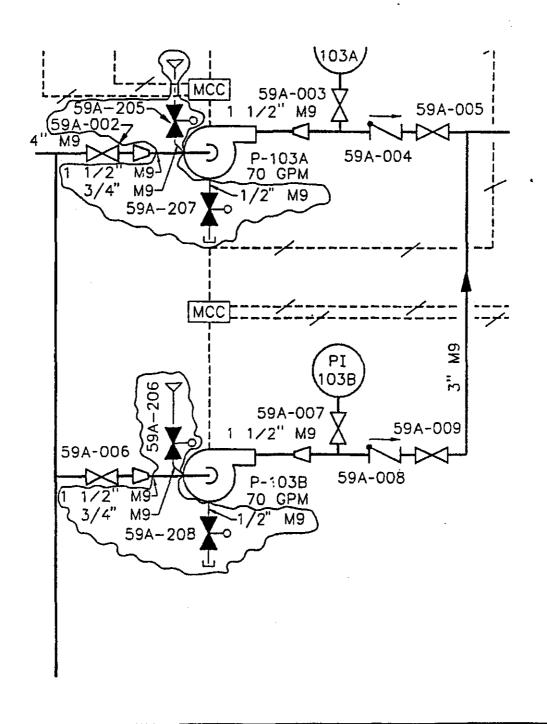


Page 12 of 24

ECN 641703 Date 5/13/97

H-2-817974, Sheet 1, Rev. 2, Zone C-7 to D-7

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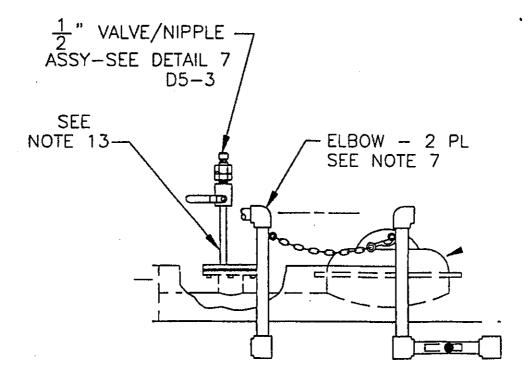


Page 13 of 24

ECN 641703 Date 5/13/97

H-9-203. Sheet 1. Rev. 0. Zone E-6

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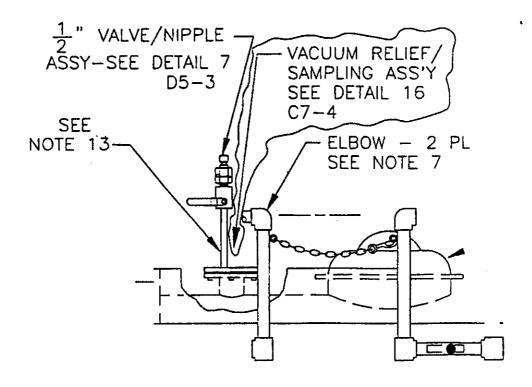


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ECH 641703 Date 5/13/97

H-9-203. Sheet 1. Rev. 0. Zone E-6

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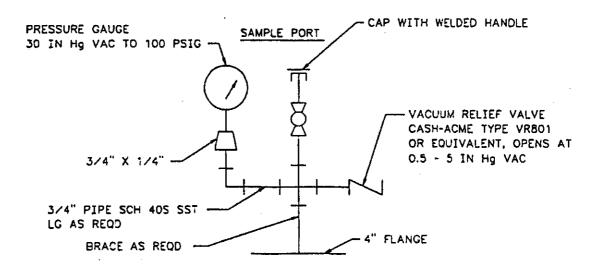


Page 15 of 24

ECN 641703 Date 5/13/97

H-9-203. Sheet 4. Rev. 0. Zone D-7.

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DETAIL 16 C6-2

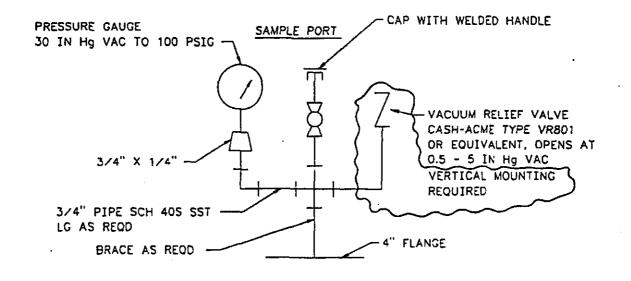
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Page 1001 24

ECH 641703 Date 5/13/97

H-9-203, Sheet 4. Rev. 0. Zone D-7

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DETAIL 16 C6-2 (E6-1)

Page 17 of 24

ECH 641703 Date 5/13/97

H-2-817968, Sheet 1, Rev. 1, Title

IS:

ETF TRUCK LOAD-IN FACILITY LOCATION PLAN & DWG LIST

CHANGE TO: ETF TRUCK LOAD-IN STATION LOCATION PLAN & DWG LIST

Drawing Status: ESSENTIAL

H-2-817969. Sheet 1. Rev. 1. Title

IS:

CIVIL ETF TRUCK LOAD-IN FACILITY SITE PLAN

CHANGE TO: CIVIL ETF TRUCK LOAD-IN STATION SITE PLAN

Drawing Status: SUPPORT

H-2-817969. Sheet 2. Rev. 1. Title

IS:

CIVIL ETF TRUCK LOAD-IN FACILITY PLAN AND PROFILES

CHANGE TO: CIVIL ETF TRUCK LOAD-IN STATION PLAN AND PROFILES

Drawing Status: SUPPORT

H-2-817969, Sheet 3, Rev. 1, Title

IS:

CIVIL ETF TRUCK LOAD-IN FACILITY ENLARGED PLAN

CHANGE TO: CIVIL ETF TRUCK LOAD-IN STATION ENLARGED PLAN

Drawing Status: SUPPORT

H-2-817969, Sheet 4, Rev. 1, Title

IS:

CIVIL ETF TRUCK LOAD-IN FACILITY MISCELLANEOUS DETAILS

CHANGE TO: CIVIL ETF TRUCK LOAD-IN STATION MISCELLANEOUS DETAILS

Page 18 of 24

ECH 641703 Date 5/13/97

H-2-817969, Sheet 5, Rev. 1, Title

IS:

CIVIL ETF TRUCK LOAD-IN FACILITY MISCELLANEOUS DETAILS

CHANGE TO:

CIVIL ETF TRUCK LOAD-IN STATION MISCELLANEOUS DETAILS

Drawing Status: SUPPORT

H-2-817970. Sheet 1. Rev. 1. Title

IS:

STRUCTURAL ETF TRUCK LOAD-IN FACILITY PLAN AND SECTIONS

CHANGE TO: STRUCTURAL ETF TRUCK LOAD-IN STATION PLAN AND SECTIONS

Drawing Status: SUPPORT

H-2-817970, Sheet 2, Rev. 1, Title

IS:

STRUCTURAL ETF TRUCK LOAD-IN FACILITY SECTIONS AND DETAILS

CHANGE TO: STRUCTURAL ETF TRUCK LOAD-IN STATION SECTIONS AND DETAILS

Drawing Status: SUPPORT

H-2-817971, Sheet 1, Rev. 1, Title

IS:

STRUCTURAL ETF TRUCK LOAD-IN FACILITY STEEL PLAN & SECTIONS

CHANGE TO:

STRUCTURAL ETF TRUCK LOAD-IN STATION STEEL PLAN & SECTIONS

Drawing Status: SUPPORT

H-2-817971, Sheet 2, Rev. 1, Title

IS:

STRUCTURAL ETF TRUCK LOAD-IN FACILITY STEEL DETAILS

CHANGE TO:

STRUCTURAL ETF TRUCK LOAD-IN STATION STEEL DETAILS

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ECN 641703 Date 5/13/97

H-2-817972. Sheet 1. Rev. 1. Title

IS:

STRUCTURAL ETF TRUCK LOAD-IN FACILITY SECTIONS AND DETAILS

CHANGE TO: STRUCTURAL ETF TRUCK LOAD-IN STATION SECTIONS AND DETAILS

Drawing Status: SUPPORT

H-2-817973, Sheet 1, Rev. 1, Title

IS:

STRUCTURAL ETF TRUCK LOAD-IN FACILITY MISC SECTIONS AND DETAILS

CHANGE TO: STRUCTURAL ETF TRUCK LOAD-IN STATION MISC SECTIONS AND DETAILS

Drawing Status: SUPPORT

H-2-817974, Sheet 1, Rev. 2, Title

IS:

P & ID ETF TRUCK LOAD-IN FACILITY

CHANGE TO: P & ID ETF TRUCK LOAD-IN STATION

Drawing Status: ESSENTIAL

H-2-817975, Sheet 1, Rev. 1, Title

IS:

PIPING ETF TRUCK LOAD-IN FACILITY PLAN

CHANGE TO: PIPING ETF TRUCK LOAD-IN STATION PLAN

Drawing Status: ESSENTIAL

H-2-817976, Sheet 1, Rev. 1, Title

is:

PIPING ETF TRUCK LOAD-IN FACILITY SECTIONS AND DETAILS

CHANGE TO: PIPING ETF TRUCK LOAD-IN STATION SECTIONS AND DETAILS

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ECN 641703 Date 5/13/97

H-2-817977, Sheet 1, Rev. 1, Title

IS:

PIPING ETF TRUCK LOAD-IN FACILITY DETAILS

CHANGE TO: PIPING ETF TRUCK LOAD-IN STATION DETAILS

Drawing Status: SUPPORT

H-2-817978, Sheet 1, Rev. 1, Title

IS:

PIPING ETF TRUCK LOAD-IN FACILITY PIPE SUPPORTS

CHANGE TO: PIPING ETF TRUCK LOAD-IN STATION PIPE SUPPORTS

Drawing Status: SUPPORT

H-2-817980. Sheet 1. Rev. 1. Title

IS:

INSTRUMENTATION ETF TRUCK LOAD-IN FACILITY LEGEND & SYMBOLS

CHANGE TO: INSTRUMENTATION ETF TRUCK LOAD-IN STATION LEGEND & SYMBOLS

Drawing Status: SUPPORT

H-2-817981, Sheet 1, Rev. 1, Title

IS:

INSTRUMENTATION ETF TRUCK LOAD-IN FACILITY LOOP DIAGRAM

CHANGE TO: INSTRUMENTATION ETF TRUCK LOAD-IN STATION LOOP DIAGRAM

Drawing Status: SUPPORT

H-2-817981, Sheet 2, Rev. 1, Title

IS:

INSTRUMENTATION ETF TRUCK LOAD-IN FACILITY LOOP DIAGRAM

CHANGE TO: INSTRUMENTATION ETF TRUCK LOAD-IN STATION LOOP DIAGRAM

Page of 24

ECN 641703 Date 5/13/97

H-2-817981. Sheet 3. Rev. 1. Title

IS:

INSTRUMENTATION ETF TRUCK LOAD-IN FACILITY LOOP DIAGRAM

CHANGE TO: INSTRUMENTATION ETF TRUCK LOAD-IN STATION LOOP DIAGRAM

Drawing Status: SUPPORT

H-2-817981, Sheet 4, Rev. 1, Title

IS:

INSTRUMENTATION ETF TRUCK LOAD-IN FACILITY LOOP DIAGRAM

CHANGE TO: INSTRUMENTATION ETF TRUCK LOAD-IN STATION LOOP DIAGRAM

Drawing Status: SUPPORT

H-2-817981. Sheet 5. Rev. 1. Title

IS:

INSTRUMENTATION ETF TRUCK LOAD-IN FACILITY LOOP DIAGRAM

CHANGE TO: INSTRUMENTATION ETF TRUCK LOAD-IN STATION LOOP DIAGRAM

Drawing Status: SUPPORT

H-2-817983, Sheet 1, Rev. 0, Title

CHANGE TO: Drawing Status: SUPPORT

H-2-817983. Sheet 2. Rev. 1. Title

CHANGE TO: Drawing Status: SUPPORT

H-2-817983. Sheet 3. Rev. 0. Title

CHANGE TO: Drawing Status: SUPPORT

H-2-817983. Sheet 4. Rev. 1. Title

CHANGE TO: Drawing Status: SUPPORT

H-2-817983, Sheet 5, Rev. 0, Title

CHANGE TO: Drawing Status: SUPPORT

Page Dof DH

ECN 641703 Date 5/13/97

H-2-817983. Sheet 6. Rev. 1. Title

CHANGE TO: Drawing Status: SUPPORT

H-2-817983. Sheet 7. Rev. 0. Title

CHANGE TO: Drawing Status: SUPPORT

H-2-817983. Sheet 8. Rev. O. Title

CHANGE TO: Drawing Status: SUPPORT

H-2-817985, Sheet 1, Rev. 1, Title

IS:

INSTRUMENTATION ETF TRUCK LOAD-IN FACILITY SECTIONS AND DETAILS

CHANGE TO: INSTRUMENTATION ETF TRUCK LOAD-IN STATION SECTIONS AND DETAILS

Drawing Status: SUPPORT

H-2-817985. Sheet 2. Rev. 1. Title

IS:

INSTRUMENTATION ETF TRUCK LOAD-IN FACILITY SECTIONS AND DETAILS

CHANGE TO: INSTRUMENTATION ETF TRUCK LOAD-IN STATION SECTIONS AND DETAILS

Drawing Status: SUPPORT

H-2-817987, Sheet 1, Rev. 1, Title

IS:

ELECTRICAL ETF TRUCK LOAD-IN FACILITY SITE PLAN

CHANGE TO: ELECTRICAL ETF TRUCK LOAD-IN STATION SITE PLAN

Drawing Status: SUPPORT

H-2-817987, Sheet 3, Rev. 1, Title

IS:

ELECTRICAL ETF TRUCK LOAD-IN FACILITY SECTIONS & DETAILS

CHANGE TO: ELECTRICAL ETF TRUCK LOAD-IN STATION SECTIONS & DETAILS

Page 23 of 24

ECN 641703

Date 5/13/97

H-2-817987, Sheet 4, Rev. 1, Title

IS:

ELECTRICAL ETF TRUCK LOAD-IN FACILITY SECTIONS & DETAILS

CHANGE TO: ELECTRICAL ETF TRUCK LOAD-IN STATION SECTIONS & DETAILS

Drawing Status: SUPPORT

H-2-817988, Sheet 1, Rev. 1, Title

IS:

ELECTRICAL ETF TRUCK LOAD-IN FACILITY PLAN, ONE-LINE & DETAILS

CHANGE TO:

ELECTRICAL ETF TRUCK LOAD-IN STATION PLAN, ONE-LINE & DETAILS

Drawing Status: ESSENTIAL

H-2-817988, Sheet 2, Rev. 1, Title

IS:

ELECTRICAL ETF TRUCK LOAD-IN FACILITY PLAN. GND & HEAT TRACING

CHANGE TO: ELECTRICAL ETF TRUCK LOAD-IN STATION PLAN, GND & HEAT TRACING

Drawing Status: ESSENTIAL

H-2-817988, Sheet 3, Rev. 1, Title

IS:

ELECTRICAL ETF TRUCK LOAD-IN FACILITY PANEL SCHEDULE & DETAILS

CHANGE TO: ELECTRICAL ETF TRUCK LOAD-IN STATION PANEL SCHEDULE & DETAILS

Drawing Status: ESSENTIAL

H-2-817989, Sheet 1, Rev. 1, Title

IS:

ELECTRICAL ETF TRUCK LOAD-IN FACILITY ELEMENTARY DIAGRAM

CHANGE TO: ELECTRICAL ETF TRUCK LOAD-IN STATION ELEMENTARY DIAGRAM

Drawing Status: ESSENTIAL

Page 24 of 24

ECN 641703 Date 5/13/97

H-2-817990, Sheet 1, Rev. 1, Title

IS:

ELECTRICAL ETF TRUCK LOAD-IN FACILITY WIRE & CONDUIT SCHEDULE

CHANGE TO: ELECTRICAL ETF TRUCK LOAD-IN STATION WIRE & CONDUIT SCHEDULE

Drawing Status: ESSENTIAL

H-2-817991, Sheet 2, Rev. 1, Title

IS:

ELECTRICAL ETF TRUCK LOAD-IN FACILITY TELECOMMUNICATIONS

CHANGE TO: ELECTRICAL ETF TRUCK LOAD-IN STATION TELECOMMUNICATIONS

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#### **ENGINEERING CHANGE NOTICE**

Page 1 of \_\_\_\_\_\_\_

1. ECN 649104

Proj

2. ECN Category (mark one)	3. Originator's Name, Organd Telephone No.	anization, MSIN,	4. USQ Requi	ired?	5. Date					
, ,	1 .	AF Crane, 32910, S6-72, 372-3152		40	2/10	5/99				
Supplemental [x] Direct Revision []			[] Yes [X] N 7. Bldg/Sys./		8. Approval De	signator				
Change ECN ()		CACN 106883 COA		59A/ETF	N.	_				
Temporary [] Standby []		EK00								
Supersedure [] Cancel/Void []	Document Numbers Ch     (includes sheet no. and it		10. Related E	CN No(s).	11. Related PO	No.				
•	Sec 1	Block 13a	641	7275	N/	Ά.				
			641	8786						
12a. Modification Work	12b. Work Package	12c. Modification Work Con	nplete		to Original Cond					
ful serven a won.	No. EL-99-00071/M			tion (Temp. o	r Standby ECN or	ı'y)				
[X] Yes (fill out Blk. 12b)	22335000111111				N/A					
[] No (NA Biks. 12b,		Design Authority/Cos		Design	Authority/Cog. E					
12c, 12d)		Signature & D	ate		Signature & Date					
13a. Description of Change	13b; [	L Design Baseline Document? [X	Yes [] No	<u> </u>	THE STATE OF					
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Affected Drawings										
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H-2-817969, Sh 2 Rev 1	H-2-817970	, Sh 2, Rev I	ification W-29	EXPIRES	ONAL ENGINEERS					
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Verification Required	ENGINEE	RING CO	NSTRUCTION	ŀ	> NA	· <
[X] Yes	Additional	[] \$ Additional	[] \$	Impi	ovement	0
D No	Savings	[] S Savings	Ü s	Dela		Ö
		cuments (other than the engineering		n Side I)	<u> </u>	
SDD/DD	[NA]	Scismic/Stress Analysis	[NA]	Tank C	alibration Manual	[NA]
Functional Design Criteria	[NA]	Stress/Design Report	[NA]	Healph	Physics Procedure	[NA]
Operating Specification	[NA]	Interface Control Drawing	[NA]	Spec	Multiple Unit Listing	[NA]
Criticality Specification	[NA]	Calibration Procedure	[NA]	Tesi Pr	occdures/Specification	.[NA]
Conceptual Design Report	[NA]	Installation Procedure	[NA]	Compo	nent Index	[NA]
Equipment Spec	[NA]	Maintenance Procedure	[NA]	ASME	Coded Item	[NA]
Const. Spee.	[NA]	Engineering Procedure	[NA]	Heman	Factor Consideration	[NA]
Procurement Spec.	[NA]	Operating Instruction	[NA]	Compu	ter Software	[NA]
Vendor Information	[X]	Operating Procedure	[NA]	Electric	: Circuit Schedule	[NA]
OM Maroal	[NA]	Operational Safety Requirement	[NA]	ICRS F	rocedure ,	[NA]
FSAR/SAR	[NA]	IEFD Drawing	[NA]	Process	Control Manua VPian	[NA]
Safety Equipment List	[NA]	Cell Arrangement Drawing	[NA]	Process	Flow Chart	[NA]
Radiation Work Permit	[NA]	Essential Material Specification	[NA]	Purcha	e Requisition	[NA]
Environmental Impact Statement	[NA]	Fac. Proc. Samp. Schedula	[NA]	Tickles	File	[NA]
Environmental Report	[NA]	Inspection Plan	[AN]			()
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20. Other Affected Docum	[NA]	lovestory Adjustment Request as listed below will not be revised b	[NA] y this ECN.) Signatures	below	······································	Ō
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# ENGINEERING CHANGE NOTICE CONTINUATION SHEET

ECN 649104

Page 3 of 8

Date 2/16/99

H-2-817969, Sh 1, Rev 1

Zone D-3: Add asphalt and concrete pad areas.

H-2-817969, Sh 2 Rev 1

Zone E-3: Add asphalt and concrete pad areas.

H-2-817969, Sh 3 Rev 1

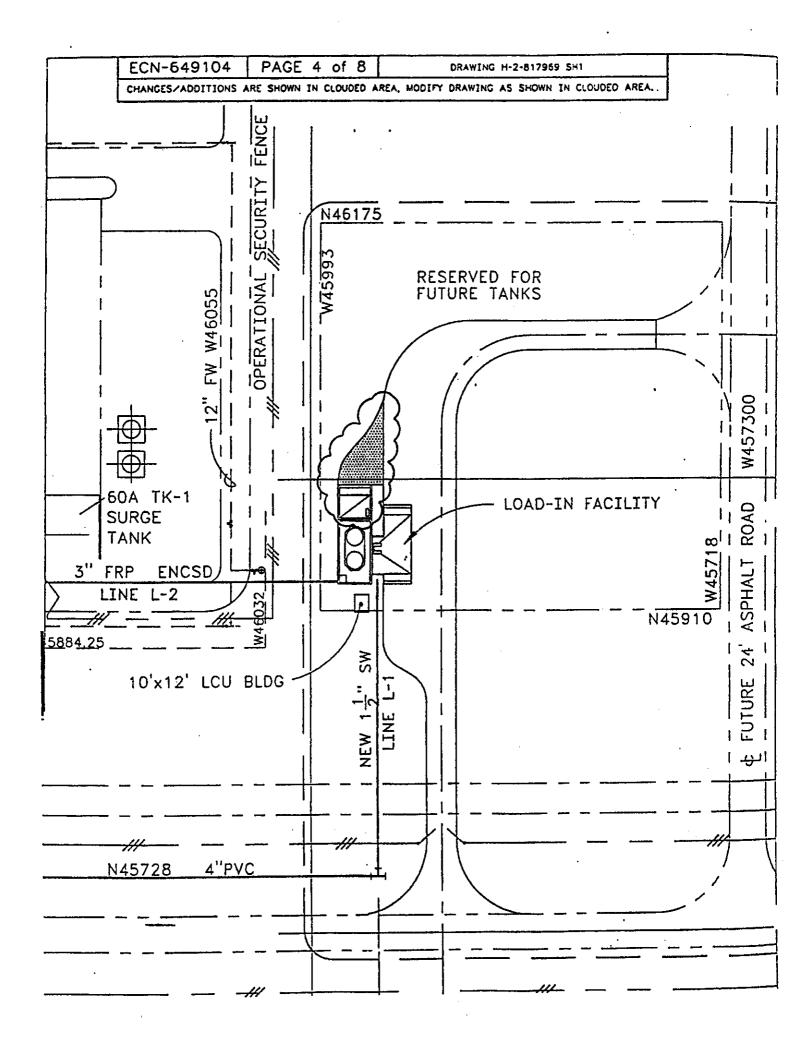
Zone D-7: Add asphalt and concrete pad areas, and elevations.

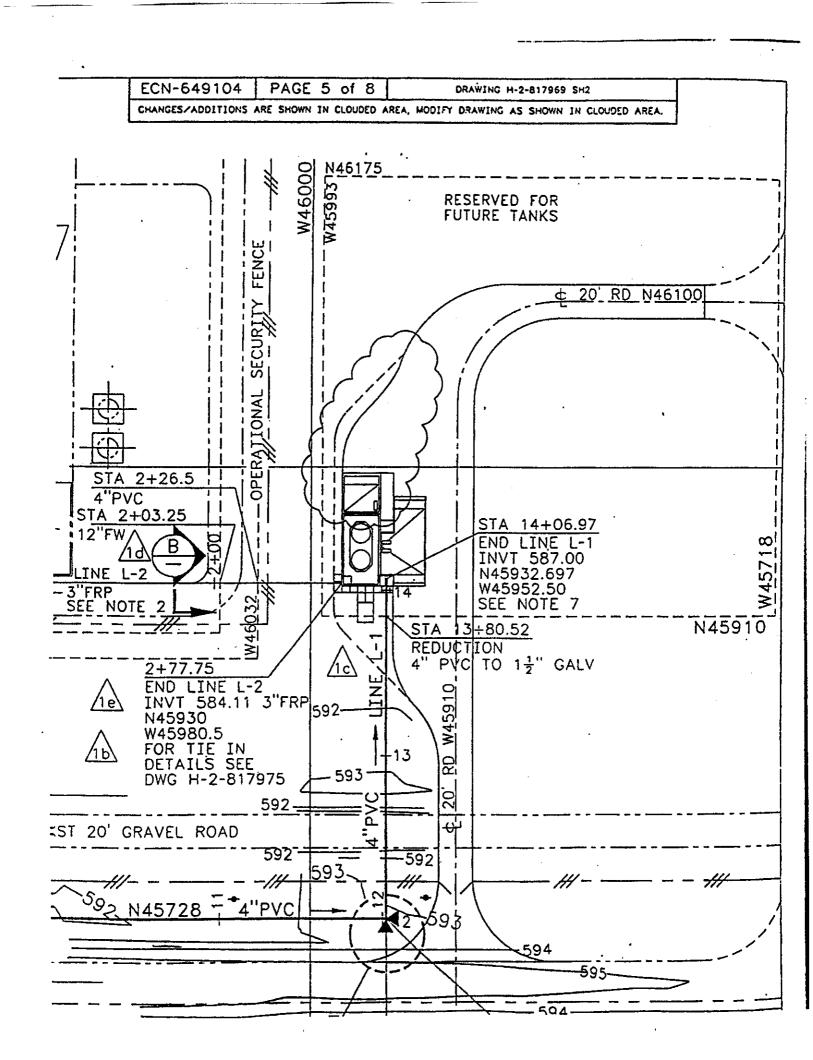
H-2-817970, Sh 1 Rev 1

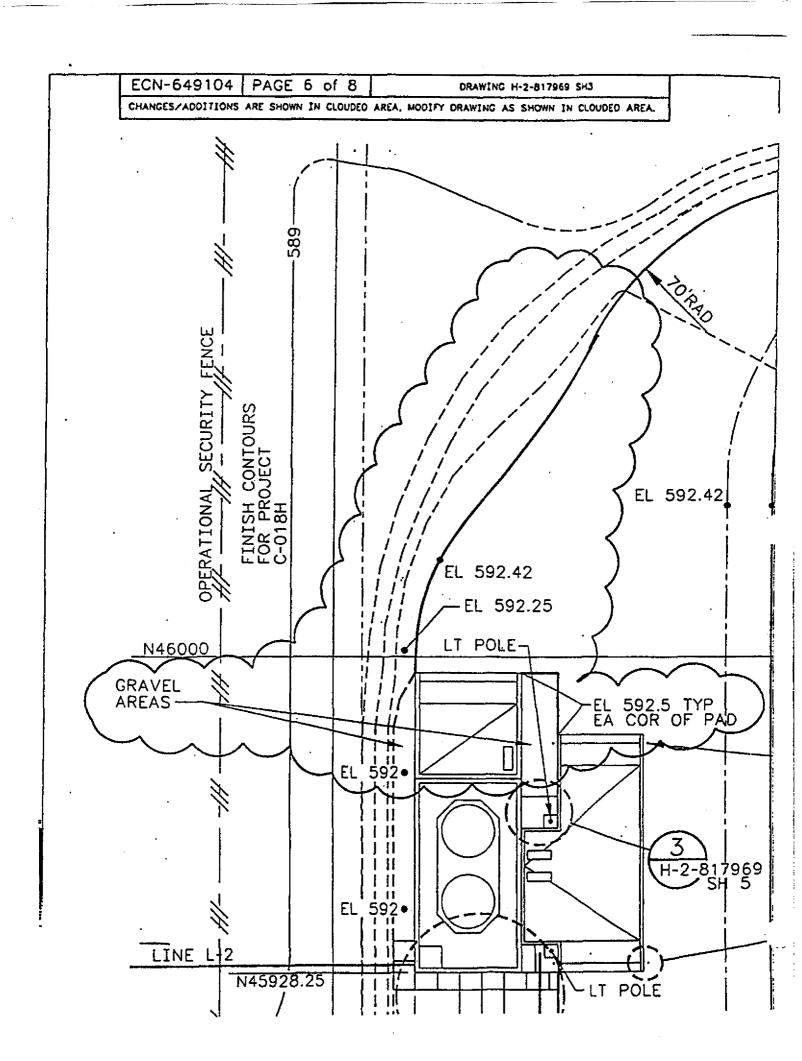
Zones C/F-5/8: Add asphalt and concrete pad areas, filter skid, pump base, dimensional details and Section G reference.

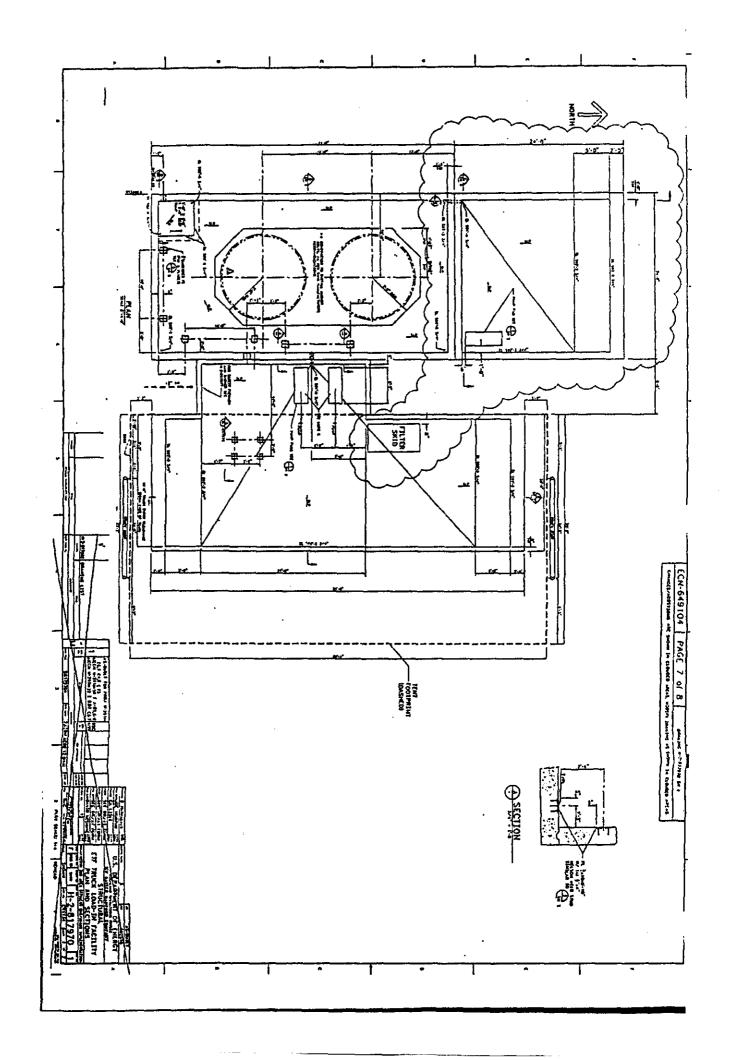
H-2-817970, Sh 2 Rev 1

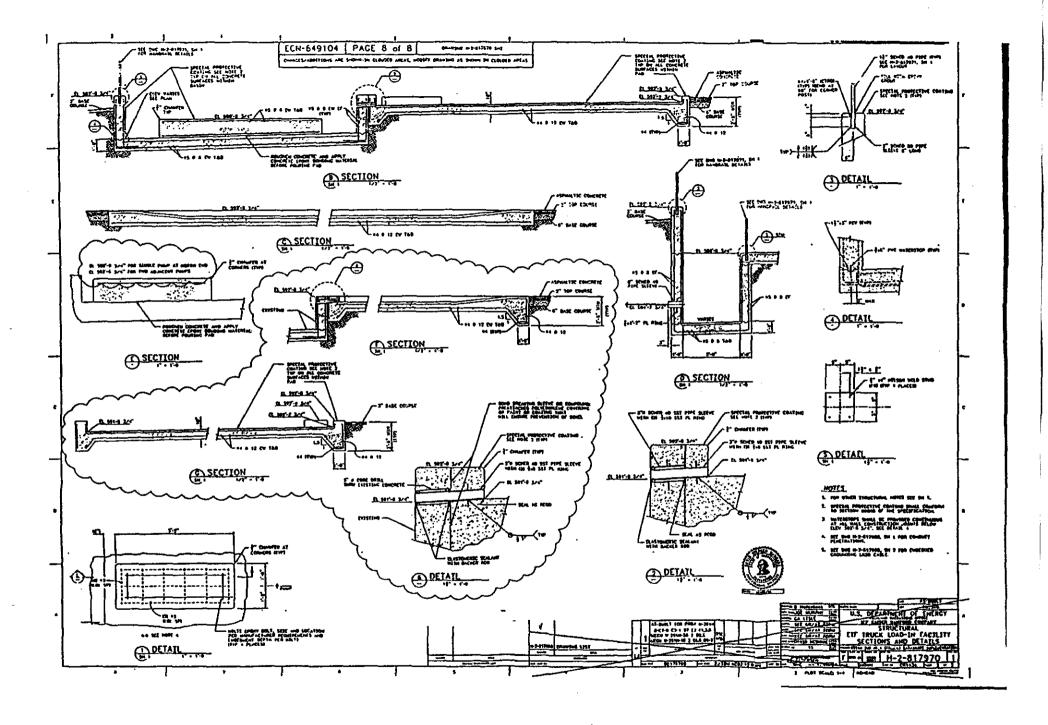
Zones A/D-4/8: Add Sections F and G and Detail 6. Add note to Section E identifying elevations of respective pump pads.











# Hanford Facility RCRA Permit Modification Notification Forms Part III, Chapter 5 and Attachment 35 242-A Evaporator

#### Page 1 of 5

# Index

Page 2 of 5: Hanford Facility RCRA Permit, III.5.A Page 3 of 5: Chapters 3.0, 6.0, 12.0, and 13.0

Page 4 of 5: Appendix 4A, Table 4A-1.
Page 5 of 5: Appendix 4A, Table 4A-2

Hanford Faci III.5.A.	242-A Exect Modification: lity RCRA Perm COMPLIANCE V The Permittees sh in Condition III.5 and tables include	nit, III.5.A.:  WITH APPROVED PERMIT A comply with all requirement. B, if any exist. Enforceable post in these portions are also enformed in these portions are also enformed in the process of the management of the process of the management of the process of the	APPLICATION  ts set forth in Attace ortions of the applications state forceable, unless state forceable sections if ending March 31, 2  I Modification for Class 1 Modification	hment 35, inclusation are listed ted otherwise):  n Chapter 2 were 20001	below; all subsect	ents specified iions, figures,
Hanford Faci	lity RCRA Pern COMPLIANCE V The Permittees sh in Condition III.5 and tables include Part A, Form 3, P Section 2.2 Section 3.2 Chapter 4.0 Chapter 6.0	with approved permit a lall comply with all requirement. B, if any exist. Enforceable posted in these portions are also enformed and application, Revision 7. Topographic Map, (non-enformed Modification) from quarter waste Analysis, from Class Process Information, from Procedures to Prevent Haza	ts set forth in Attac ortions of the applic orceable, unless sta forceable sections i ending March 31, 1 Modification for Class 1 Modification	ation are listed ted otherwise): n Chapter 2 wer 20001 r quarter ending	below; all subsect	ions, figures,
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. (	Chapter 4.0 Chapter 6.0	Process Information, from Procedures to Prevent Haza	Class 1 Modification		March 31, 2001	
	Chapter 6.0	Procedures to Prevent Haza		_		
(	•		rde dated May 100			
	Chapter 7.0					quarter ending
(		Contingency Plan, dated M September 30, 2000	ay 1998, from Clas	s 1 Modificatio	n for quarter endin	ıg
	Chapter 8.0	Personnel Training				
	Chapter 11.0	Closure and Financial Assu	rance, from Class 1	Modification f	for quarter ending	June 30, 1998
	Chapter 12.0	Reporting and Recordkeep				
	Chapter 13.0	Other Federal and State La				
	Appendix 2A	Topographic Map	,		demination of the second state	,
	Appendix 3A	Waste Analysis Plan for 24 March 31, 1998	2-A Evaporator, fro	om Class 1 Mod	lification from qua	irter ending
1	Appendix 4A	Engineering Drawings, from	n Class 1 Modifica	tion for quarter	ending March 31.	2000
	Appendix 4B	The 242-A Evaporator/Cry				
1	Appendix 7A	Building Emergency Plan f September 30, 2000 Enfor 7.1.1, 7.1.2, 7.2, 7.2.1, 7.2.1 9.5, 9.6, 11.0, 12.0, and 13.	ceable portions inc 2, 7.2.3, 7.2.4, 7.2.5	lude Sections 1.	.5, 3.1, 4.0 (1 <sup>st</sup> par	agraph), 7.1,
,	Appendix 8A	200 Area Liquid Waste Pro Training Plan from Class 1	cessing Facilities A			s Waste
Modification	Class: 12 3	····	Class 1	Class 11	Class 2	Class 3
	one of the Class	es:	X			
		Appendix I Modification:	A.1.	Salar British Marie	k aciacul Macie Siekel nych jan	
		ation from WAC 173-303-8		ation		<del></del>
A. General F	Permit Provision		o, rippendix i en			
		mornado) harrados a um es	ALIMATO COLORES MALE	tang tanggan and a		AND PERSONAL COLUMN
Submitted by (	Co-Operator: R	eviewed RL Program Office APR 0 6 201		y Ecology:	Reviewed by	Ecology:
E. S. Aromi	<del></del>	G. H. Sanders Date	F. Jamison	Date	L.E. Ruud	Date

<sup>&</sup>lt;sup>1</sup> Class 1 modifications requiring prior Agency approval.

<sup>&</sup>lt;sup>2</sup> This is only an advanced notification of an intended Class <sup>1</sup>1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

<sup>&</sup>lt;sup>3</sup> If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to <sup>1</sup>1, if appropriate.

Hanford Fa	acility RCRA Per	mit N	<i>l</i> odification	Notification	on Form	
Unit: 242-A Evapor	rator		Part		t & Chapter: and Attachmer	nt 35
Description of Modification: Remove Chapters 3.0, 6.0, 12.0, a	and 13.0 and replace v	vith th	e attached Cha	apters 3.0, 6.0,	12.0, and 13.0.	
These sections were converted fro changes were made to the text.	om WordPerfect to M	icroso	ft Word, which	n resulted in fo	ormatting change	es. No
						į
Modification Class: 123			Class 1	Class 11	Class 2	Class 3
Please check one of the Classes:			X			
Relevant WAC 173-303-830, App			A.1.			
Enter wording of the modification  A. General Permit Provisions	•	-830. /	Appendix I cita	ition		
1. Administrative and inform		Hartiga				edentical Patric
Submitted by Co-Operator: Review	7 7	ice:	Reviewed by		Reviewed by	
E. S. Aromi Date G. F	H. Sanders Da		F. Jamison	Date	L.E. Ruud	Date

<sup>&</sup>lt;sup>1</sup> Class 1 modifications requiring prior Agency approval.

<sup>&</sup>lt;sup>2</sup> This is only an advanced notification of an intended Class <sup>1</sup>1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

<sup>&</sup>lt;sup>3</sup> If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to <sup>1</sup>1, if appropriate.

#### Hanford Facility RCRA Permit Modification Notification Form Unit: Permit Part & Chapter: 242-A Evaporator Part III. Chapter 5 and Attachment 35 Description of Modification: Remove Appendix 4A and replace with the attached Appendix 4A. Table 4A-1. Process and Instrumentation Diagrams. System **Drawing Number Outstanding ECNs Drawing Title** Vapor-Liquid Separator H-2-98988 Sh. 1, Rev. 67 ECN-647922 None P & ID Evap Recirc System Reboiler/Recirculation Line ECN-613444 None H-2-98988 Sh. 2, Rev. 5 P & ID Evap Recirc System H-2-98989 Sh. 1.Rev. 10 Slurry System P & ID Slurry System ECN-662012 H-2-98990 Sh. 1, Rev. 910 None Condensate Collection Tank P & ID Process Condensate System H-2-98995 Sh. 1, Rev. 11 None Secondary Containment Drain P & ID Drain System **ÈCN-664301** System H-2-98995 Sh. 2, Rev. 5 Secondary Containment Drain None P & ID Drain System System H-2-98999 Sh. 1, Rev. 11 P & ID Vacuum Condenser Condensers None System H-2-99002 Sh. 1, Rev. 5 ECN-647885 Pump Room Sump P & ID Jet Gang Valve System H-2-99003 Sh. 1, Rev. 1012 ECN 627940 P & ID Filtered Raw Water Condensate Recycle System ECN647922 System None Modification Class: 123 Class 11 Class 1 Class 2 Class 3 X Please check one of the Classes: Relevant WAC 173-303-830, Appendix I Modification: A.1. Enter wording of the modification from WAC 173-303-830, Appendix I citation A. General Permit Provisions 1. Administrative and informational changes. Submitted by Co-Operator: Reviewed by RL Program Office: Reviewed by Ecology: Reviewed by Ecology: 3/14/01 E. S. Aromi G. W. Sanders Date F. Jamison L.E. Ruud Date Date Date

<sup>&</sup>lt;sup>1</sup>Class 1 modifications requiring prior Agency approval.

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# Hanford Facility RCRA Permit Modification Notification Form

Unit: 242-A Evaporator

Permit Part & Chapter:
Part III, Chapter 5 and Attachment 35

#### Description of Modification:

Remove Appendix 4A and replace with the attached Appendix 4A.

Table 4A-2. Drawing of 242-A Evaporator Secondary Containment Systems.

242-A Building  H-2-69277 Sh 1, Rev 2  None  Structural Foundation Plan S General Notes - Areas 1 & 2  H-2-69278 Sh 1, Rev 3  None  Structural Foundation Elevat Areas 1 & 2  H-2-69279 Sh 1, Rev 3  None  Structural First Floor Plan & & 2	ections &		
H-2-69279 Sh 1, Rev 3  None  Structural Foundation Elevat Areas 1 & 2  Structural First Floor Plan & & 2			
& 2	ons & Details -		
	AMU - Areas I		
Pump Room Sump Drainage H-2-69352 Sh 1, Rev 4 ECN-121216 Sections Process Waste Drain ECN-194242 ECN-610629 ECN-620353	nage		
242-A Building Drainage  H-2-69354 Sh 1, Rev 4  ECN-194242  ECN-610629  ECN-620353  Plan Process Waste Drainage			
Pump Room Sump H-2-69369 Sh 1, Rev 1 None Pump Room Sump Assembly	m Sump Assembly & Details		
Modification Class: 123 Class 1 Class 2	Class 3		
IMPORTICATION CLASS:	C1922.2		
Please check one of the Classes:			
Please check one of the Classes:			
Please check one of the Classes:  X  Relevant WAC 173-303-830, Appendix I Modification: A.1.			
Please check one of the Classes:			
Please check one of the Classes:  Relevant WAC 173-303-830, Appendix I Modification:  Enter wording of the modification from WAC 173-303-830, Appendix I citation  A. General Permit Provisions  1. Administrative and informational changes.			
Please check one of the Classes:  Relevant WAC 173-303-830, Appendix I Modification:  Enter wording of the modification from WAC 173-303-830, Appendix I citation  A. General Permit Provisions  1. Administrative and informational changes.			

<sup>&</sup>lt;sup>1</sup> Class 1 modifications requiring prior Agency approval.

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# Hanford Facility RCRA Permit Modification Notification Part III, Chapter 5 and Attachment 35 242-A Evaporator

# Replacement Chapters

# Index

Enforceable Chapters	Non-enforceable Chapters
Chapter 3.0	Foreword
Chapter 6.0	Contents
Chapter 12.0	Chapter 5.0
Chapter 13.0	Chapter 9.0
Appendix 4A	Chapter 10.0
	Chapter 15.0

#### HANFORD FACILITY DANGEROUS WASTE PERMIT APPLICATION, 1 2 242-A EVAPORATOR **FOREWORD** 3 The Hanford Facility Dangerous Waste Permit Application is considered to be a single application 4 organized into a General Information Portion (document number DOE/RL-91-28) and a Unit-Specific 5 Portion. The scope of the Unit-Specific Portion is limited to Part B permit application documentation 6 submitted for individual, 'operating' treatment, storage, and/or disposal units, such as the 7 242-A Evaporator (this document, DOE/RL-90-42). 8 Both the General Information and Unit-Specific portions of the Hanford Facility Dangerous Waste 9 Permit Application address the content of the Part B permit application guidance prepared by the 10 Washington State Department of Ecology (Ecology 1987 and 1996) and the U.S. Environmental 11 Protection Agency (40 Code of Federal Regulations 270), with additional information needs defined by 12 the Hazardous and Solid Waste Amendments and revisions of Washington Administrative Code 173-303. 13 For ease of reference, the Washington State Department of Ecology alpha-numeric section identifiers 14 from the permit application guidance documentation (Ecology 1996) follow, in brackets, the chapter 15 headings and subheadings. A checklist indicating where information is contained in the 16 242-A Evaporator permit application documentation, in relation to the Washington State Department of 17 18 Ecology guidance, is located in the Contents Section. Documentation contained in the General Information Portion is broader in nature and could be used by 19 multiple treatment, storage, and/or disposal units (e.g., the glossary provided in the General Information 20 Portion). Wherever appropriate, the 242-A Evaporator permit application documentation makes 21 cross-reference to the General Information Portion, rather than duplicating text... 22 23

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TRAINING

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#### METRIC CONVERSION CHART

## Into metric units

# Out of metric units

If you know	Multiply by	To get	If you know	Multiply by	To get
2. 700 12.0 11	Length		12.700	Length	
inches	25.40	millimeters	millimeters	0.0393	inches
inches	2.54	centimeters	centimeters	0.393	inches
feet	0.3048	meters	meters	3.2808	fect
yards	0.914	meters	meters	1.09	yards
miles	1.609	kilometers	kilometers	0.62	miles
	Area			Area	1
square inches	6.4516	square centimeters	square centimeters	0.155	square inches
square feet	0.092	square meters	square meters	10.7639	square feet
square yards	0.836	square meters	square meters	1.20	square yards
square miles	2.59	square kilometers	square kilometers	0.39	square miles
acres	0.404	hectares	hectares	2.471	acres
	Mass (weight)		Mass (weight)		
ounces	28.35	grams	grams	0.0352	ounces
pounds	0.453	kilograms	kilograms	2.2046	pounds
short ton	0.907	metric ton	metric ton	1.10	short ton
	Volume		Volume		
fluid ounces	29.57	milliliters	milliliters	0.03	fluid ounces
quarts	0.95	liters	liters	1.057	quarts
gallons	3.79	liters	liters	0.26	gallons
cubic feet	0.03	cubic meters	cubic meters	35.3147	cubic feet
cubic yards	0.76456	cubic meters	cubic meters	1.308	cubic yards
	Temperature			Temperature	
Fahrenheit	subtract 32 then multiply by 5/9ths	Celsius	Celsius	multiply by 9/5ths, then add 32	Fahrenheit
	Force			Force	
pounds per square inch	6.895	kilopascals	kilopascals	1.4504 x 10 <sup>-4</sup>	pounds per square inch

3 4

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Publications, Inc., Belmont, California.

Source: Engineering Unit Conversions, M. R. Lindeburg, PE., Second Ed., 1990, Professional

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#### 3.0 WASTE CHARACTERISTICS [C]

- 2 This chapter provides information on the chemical, biological, and physical characteristics of the waste
- 3 treated, stored, and generated at the 242-A Evaporator. The waste acceptance criteria are included in the
- 4 waste analysis plan (Appendix 3A).

# 5 3.1 CHEMICAL, BIOLOGICAL, AND PHYSICAL ANALYSES [C-1]

6 This section discusses the chemical, biological, and physical analyses of waste at the 242-A Evaporator.

# 7 3.1.1 Characteristics of Waste Treated at the 242-A Evaporator

- 8 Waste processed at the 242-A Evaporator is received from the DST System. The mixed waste is an
- 9 aqueous solution containing dissolved cations and anions such as sodium, potassium, aluminum,
- 10 hydroxides, nitrates, and nitrites. Small quantities of ammonia and organics also could be present.
- 11 Waste received in the DST System has been chemically adjusted to be compatible with materials used for
- 12 construction of the DST System and the 242-A Evaporator.
- 13 Example analysis of DST System waste processed through the 242-A Evaporator is available in
- 14 Characterization of Double Shell Tank for Evaporator 242 Project Tank 241-AP-101 (WHC 1994a)
- and Characterization of Double Shell Tank for Evaporator 242 Project Tank 241-AP-107
- 16 (WHC 1994b).
- 17 Waste transferred to the 242-A Evaporator could be assigned any of the dangerous waste numbers found
- in the Part A, Form 3 (Chapter 1.0). These dangerous waste numbers are identical to those in the Part A,
- 19 Form 3, for the DST System.

## 20 3.1.2 Characteristics of Waste Streams Generated at the 242-A Evaporator

- 21 Two mixed waste streams are generated at the 242-A Evaporator: slurry and process condensate. The
- 22 slurry stream contains the same components as the DST System waste with increased concentrations and
- 23 most of the volatile constituents transferred to the process condensate. An example of analysis of slurry
- 24 stream is available in 222-S Characterization of 242-A Evaporator Slurry, Campaign 94-1
- 25 (WHC 1994c). The dangerous waste numbers for the waste feed, given in Chapter 1.0, are applicable to
- the slurry waste returned to the DST System.
- 27 The process condensate is condensed vapor from the evaporation process. The process condensate
- 28 consists of water with small amounts of ammonia and volatile organics. Trace quantities of
- 29 radionuclides and inorganic constituents also are present. An example of analysis of process condensate
- 30 is available in Data Validation Report for 242A Evaporator Process Condensate, (three reports:
- 31 WHC 1994d). A discussion of the dangerous waste numbers assigned to the process condensate stream
- 32 is given in the waste analysis plan (Appendix 3A).
- 33 The slurry and process condensate waste streams generated and stored at the 242-A Evaporator are
- restricted from land disposal, per 40 CFR 268, until additional treatment is performed. Treatment of the
- 35 slurry stream returned to the DST System is under development. Treatment of process condensate stream
- 36 is performed at the LERF and 200 Area ETF.

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- A discussion of organic air emission subject to WAC 173-303-690 and 40 CFR 264, Subpart AA, are
- 2 given in the waste analysis plan (Appendix 3A) and in Chapter 4.0.
- 3 Other waste generated by 242-A Evaporator operations include decontamination solution waste and
- 4 secondary waste. The most common decontamination solution is water, but nitric or citric acids could be
- 5 used. Decontamination waste is collected in the 242-A Evaporator tanks, chemically adjusted to meet
- 6 DST System requirements, and transferred to the DST System.
- 7 Secondary waste, generated during operations and maintenance work, consists of, but is not limited to,
- 8 dry solid materials (such as failed equipment, paper towels, and rags) contaminated with dangerous
- 9 and/or mixed waste. Secondary waste is containerized and transferred to a permitted TSD unit.
- 10 Secondary waste containers are not stored at the 242-A Evaporator for greater than 90 days.

# 11 3.2 WASTE ANALYSIS PLAN [C-2]

12 Appendix 3A contains the waste analysis plan.

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# 5.0 GROUNDWATER MONITORING [E]

- The 242-A Evaporator is not operated as a dangerous or mixed waste surface impoundment, waste pile, land treatment unit, or landfill as defined in WAC 173-303-645(1)(a). Therefore, groundwater 2
- 3
- monitoring is not required. 4

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#### 6.0 PROCEDURES TO PREVENT HAZARDS [F]

- 2 This chapter discusses security, inspection schedules, preparedness and prevention requirements,
- 3 preventive procedures, structures, and equipment, and prevention of reaction of ignitable, reactive, and
- 4 incompatible waste for the 242-A Evaporator.

#### 5 6.1 **SECURITY** [F-1]

- 6 The following sections describe the security measures, equipment, and warning signs used to control
- 7 entry to the 242-A Evaporator. Hanford Facility security measures are discussed in the General
- 8 Information Portion (DOE/RL-91-28).

#### 9 6.1.1 Security Procedures and Equipment [F-1a]

- 10 The following sections describe the 24-hour surveillance system, barriers, and warning signs used to
- provide security and control access to the 242-A Evaporator.

#### 12 6.1.1.1 24-hour Surveillance System

- 13 The entire Hanford Facility Site is a controlled-access area with around-the-clock access control. For
- surveillance information refer to the General Information Portion (DOE/RL-91-28).

#### 15 6.1.1.2 Barrier and Means to Control Entry

- 16 All 242-A Evaporator mixed waste tanks and equipment are located within the 242-A Building, which is
- 17 protected by the building structure and secured entrances. The main entrance, on the east side of the
- building, and the office entrances, on the south side of the building, are open during normal day shift
- 19 hours. All other external entrances, including external entrances to areas containing mixed waste, are
- 20 secured. Visitors are required to check in at the control room and must be escorted when entering areas
- 21 of the 242-A Evaporator where they might be exposed to mixed waste. All entrances are secured when
- the building is not staffed. Security lighting is provided around the outside of the building.

#### 23 6.1.1.3 Warning Signs

- 24 Signs bearing the legend "DANGER-- HAZARDOUS MATERIAL UNAUTHORIZED PERSONNEL
- 25 KEEP OUT," or equivalent legend, legible from a distance of 7.6 meters, are posted on entrances to
- 26 rooms at the 242-A Evaporator Building that could contain mixed waste. In addition, there are posted
- 27 signs at the main entrance and other office entrances instructing visitors to report to the control room for
- 28 access to the 242-A Evaporator.

#### 29 6.1.2 Waiver [F-1b]

- 30 A waiver of security procedures and equipment requirements is not requested for the 242-A Evaporator.
- Therefore, the waiver requirements outlined in WAC 173-303-310(1)(a) and (b) are not applicable.

# 1 6.2 INSPECTION PLAN [F-2]

- 2 This section describes the method and schedule for inspections of the 242-A Evaporator. The purpose of
- 3 inspections is to identify situations that might cause or lead to a release of mixed waste that could pose a
- 4 threat to human health and the environment. Abnormal conditions identified by an inspection must be
- 5 corrected on a schedule that prevents hazards to the public and environment.

#### 6 6.2.1 General Inspection Requirements [F-2a]

- 7 This section provides an overview of inspections performed at the 242-A Evaporator. A copy of the
- 8 inspection plan is kept in the 242-A Evaporator control room. There are three general classes of
- 9 inspections at the 242-A Evaporator:
- Continuous monitoring of remote instrumentations and alarms are performed by operating personnel in the 242-A Evaporator control room using the MCS computer.
- Visual inspections of tanks and equipment are performed by operating personnel. Some inspections
- of fire protection equipment, such as sprinkler system inspections, are performed by the Hanford Fire
- 14 Department.
- Preventive maintenance of equipment and calibration of instruments are performed by maintenance
- personnel. A computerized tracking system is used to identify and schedule preventive maintenance
- 17 and calibration activities.
- 18 Preventive maintenance and instrument calibrations on certain equipment might not be possible when the
- 19 242-A Evaporator is operating. Because of the limited duration of 242-A Evaporator campaigns, these
- 20 activities are scheduled during outages between campaigns to avoid interference with operating activities.

#### 21 6.2.1.1 Types of Problems

- 22 The 242-A Evaporator inspections include, but are not limited to, the following:
- Condition of tanks and ancillary equipment
- Condition of secondary containment
- 25 Evidence of leaks or overflows from tanks, piping, or transfer lines
- Condition of security equipment
- Condition of safety, communications, and emergency equipment.
- A schedule of inspections, including items to be inspected, problems to look for, frequency of
- inspections, and responsible organization are provided in Tables 6-1 through 6-4.

#### 30 6.2.1.2 Frequency of Inspections

- 31 The frequency of inspections is based on the significance of a failure of the equipment and on regulatory
- 32 requirements, Hanford Site and industry standards, and past experience of the nature and frequency of
- 33 equipment failures.
- 34 The frequency of inspections for the 242-A Evaporator are given in Tables 6-1 through 6-4. Examples of
- 35 frequencies include:
- Daily (at least every 24 hours) visual inspections of tanks, piping and secondary containment.

- Weekly (at least every 7 days) visual inspections of personal protective equipment, exterior
   lighting, and posted warning signs.
- Monthly (at least every 31 days) inspections of emergency sirens, fire extinguishers, safety
   showers, emergency lighting and the spill control kit.
- 5 Bimonthly (at least every 62 days) inspection of cathodic protection system rectifiers.
- Annually (at least every 365 days) instrumentation calibrations, cathodic protection system testing,
   fire inspections.
- 8 Leak detectors are functionally checked within 92 days of the start of a campaign and every 92 days
- 9 thereafter until the campaign is over. The frequency of some alarm monitoring is continuous. This
- means an operator must be present in the control room to monitor alarm instruments that continuously
- 11 check for conditions such as leaks and high sump levels. Continuous monitoring is only required when
- 12 the system is operating.

#### 13 6.2.2 Tank System Inspections and Corrective Actions [F-2d(2)]

- 14 This section discusses the inspections performed on the two tank systems at the 242-A Evaporator: the
- vapor-liquid separator, C-A-1, and the condensate collection tank, C-100. Inspections include secondary
- 16 containment and leak and overfill prevention equipment.

#### 17 6.2.2.1 Overfill Prevention

- 18 The vapor-liquid separator, C-A-1, is equipped with instrumentation that alarms before the tank reaches a
- 19 level where the tank could overflow or entrain liquid waste into the vacuum condenser system. The
- alarm annunciates in the control room allowing operating personnel to take immediate action to stop the
- 21 vapor-liquid separator from overfilling.
- The condensate tank, C-100, was designed with an overflow line that routes waste to the feed tank,
- 23 241-AW-102. This design prevents tank overflow to the condenser room.

#### 24 6.2.2.2 Visual Inspections

- 25 Visual inspections of tanks and secondary containments are performed to check for leaks, signs of
- 26 corrosion or damage, and malfunctioning equipment. Inspections also include housekeeping checks to
- 27 ensure aisle space requirements are met. The following rooms containing dangerous waste are inspected:
- 28 Condenser room
- 29 Pump room
- 30 Loadout and hot equipment storage room
- 31 Loading room
- Ion exchange column room.
- 33 In addition, the AMU room is inspected when hazardous materials are present in the room. Inspection of
- 34 the ion exchange column room is required only when mixed waste is present in the ion exchange column
- 35 or piping.
- 36 The vapor-liquid separator is located in the evaporator room, with a portion of the recirculation loop.
- 37 located in the pump room. Because of the high radiation dose in the evaporator room, visual inspections

- cannot be performed. Leaks in the evaporator room drain to the pump room sump; monitoring of the
- 2 pump room sump instrumentation is performed to determine if leaks have occurred. Visual inspection of
- 3 the portion of the recirculation loop located in the pump room is performed through the shielding
- 4 window on the AMU mezzanine.

#### 5 6.2.2.3 Leak Detectors

- 6 Conductivity probe leak detectors are installed to measure leaks to secondary containment of the feed
- 7 transfer line, slurry line, and drain lines connecting the 242-A Evaporator to AW Tank Farm. The slurry
- 8 and drain lines are equipped with cleanout boxes that also have leak detectors. The sample enclosures in
- 9 the loadout and hot equipment storage room have leak detectors for both the feed and slurry samplers.
- For information on these systems and their secondary containment, refer to Chapter 4.0, Section 4.1.4.
- 11 Leaks to secondary containment in the evaporator room, pump room, loadout and hot equipment storage
- 12 room, and loading room drain to the pump room sump. The sump high level alarm serves as a leak
- detector for these rooms. For information on the rooms and their drain systems, refer to Chapter 4.0,
- 14 Section 4.1.4.

#### 15 6.2.2.4 Cathodic Protection

- An active cathodic protection system is installed in the 200 East Area Tank Farms to protect underground
- piping, including the feed transfer, slurry, and drain lines, from galvanic corrosion. The system consists
- of rectifiers providing direct current to buried anodes that direct the current to the soil. Test stations are
- 19 located along the system to determine operability by taking readings on the system. The installation is
- 20 according to the recommended practices of NACE.
- 21 Rectifiers are checked for signs of damage or component degradation at least every 2 months for cathodic
- 22 protection systems. Operability testing of the cathodic protection system is performed annually.

#### 23 6.2.2.5 Tank Assessments

- 24 The IAR was issued in 1993 (Appendix 4C). The frequency and nature of these assessments are
- discussed in the IAR.

#### 26 6.2.3 Storage of Reactive and Ignitable Wastes [F-2d(3)]

- 27 The Hanford Fire Department performs annual fire inspections of the 242-A Evaporator using a checklist
- 28 developed specifically for facilities that handle dangerous and/or mixed waste. The checklist was
- 29 developed from requirements in the Uniform Fire Code and the National Fire Protection Association
- 30 code. A copy of the completed checklist is given to operating management to take remedial actions for
- 31 any problems identified. The completed checklist is included in the operating record and also is
- 32 available from the Hanford Fire Department.

#### 33 6.2.4 Air Emissions Control and Detection Inspections [F-2d(4)]

- 34 The process vent at the 242-A Evaporator is subject to 40 CFR 264, Subpart AA, which requires organic
- 35 emissions be limited to 1.4 kilograms per hour, and 2.8 megagrams per year, or controls be installed to
- 36 reduce organic emissions by 95 percent. Organic concentrations in the waste processed at the
- 37 242-A Evaporator are limited to ensure the values of 1.4 kilograms per hour and 2.8 megagrams per year

- are not exceeded. Therefore, no emission control devices are installed on the 242-A Evaporator vessel
- 2 ventilation system and no inspections are required (Chapter 4.0, Section 4.2).

#### 3 6.2.5 Inspection Logs [F-2b]

- 4 Visual inspections are performed using inspection log sheets (also called round sheets) that outline
- 5 frequency, the components to inspect, and types of problems. Log sheets are kept in the
- 6 242-A Evaporator control room. Inspectors record the following information:
- 7 Date and time of the visual inspection
- 8 Printed name and signature of the person performing the inspection
- Notations of the observations made, including space for writing comments.
- 10 Completed log sheets are reviewed and approved by the shift supervisor, collected, and stored for at least
- 11 5 years.
- 12 Maintenance inspections are performed as part of the maintenance job control system. After completion,
- 13 the maintenance documentation is reviewed and signed.

#### 14 6.2.6 Schedule for Remedial Action for Problems Revealed [F-2c]

- 15 If while performing a visual inspection (Table 6-1), a leak or spill is discovered, facility management
- responds immediately per the building emergency plan (Chapter 7.0). Action is taken to stop the leak
- and determine the cause. The waste is removed from the secondary containment within 24 hours or in a
- 18 timely manner that prevents harm to human health and the environment. For spills that drain to the pump
- room sump, the sump must be emptied and rinsed three times (Chapter 4.0, Section 4.1.5).
- 20 If an alarm activates during inspections, an operator responds immediately and implements appropriate
- 21 actions.
- 22 If an inspection identifies equipment that is missing, damaged, or not operating properly, the operator
- 23 records the problem on a deficiency log in the 242-A Evaporator control room. Repair work is
- 24 prioritized by facility management to mitigate health risks to workers, maintain integrity of the facility,
- and prevent hazards to public health and the environment. The Hanford Fire Department repairs fire
- 26 prevention equipment.

#### 27 6.3 PREPAREDNESS AND PREVENTION REQUIREMENTS [F-3]

- 28 The following sections document the preparedness and prevention measures taken at the
- 29 242-A Evaporator.

#### 30 6.3.1 Equipment Requirements [F-3a]

- 31 The following sections describe the internal and external communications and emergency equipment
- 32 located at the 242-A Evaporator.

#### 1 6.3.2 Internal Communications

- 2 The 242-A Evaporator is equipped with internal communication systems to provide immediate
- 3 emergency instruction to facility personnel. The onsite communication systems at the 242-A Evaporator
- 4 include telephones, hand-held two-way radios, a public address system, and alarm systems. The
- 5 telephone and radio systems provide for internal and external communication. Alarm systems allow
- 6 facility personnel to appropriately respond to various emergencies, including building evacuations, take
- 7 cover events, fires and/or explosions. The locations of telephones, public address systems, and alarms
- 8 are given in the Building Emergency Plan (Appendix 7A).
- 9 Immediate emergency instruction to personnel is provided by a public address system using speaker
- horns and speakers located throughout the 242-A and 242-AB Buildings and outside.

#### 11 6.3.2.1 External Communications

- 12 The 242-A Evaporator is equipped with devices for summoning emergency assistance from the Hanford
- 13 Fire Department, the Hazardous Materials Response Team, and/or local emergency response teams, as
- 14 necessary. External communication is made through the normal telephone system. In addition, the
- 15 following systems are available for external communication with persons assigned to emergency
- 16 response organizations:
- A crash alarm telephone is available in the 242-A Evaporator control room. The crash alarm
- telephone system provides communication of centralized emergency response instructions to
- 19 242-A Evaporator personnel
- Fire alarm pull boxes and fire sprinkler flow monitoring devices are connected to a system monitored around the clock by the Hanford Fire Department
- 22 Telephone number 911 (811 if using a cellular phone) is the contact point for the Hanford Site; on
- 23 notification, the Hanford Patrol Operations Center notifies and/or dispatches required emergency
- 24 responders
- Telephone number 373-3800 is the single point of contact for the Hanford Site emergency duty officer; this number can be dialed from any Hanford telephone
- 27 During certain periods, only one operator may be present at the facility. This operator has access to
- 28 external communication using telephones located throughout the building.

#### 29 6.3.2.2 Emergency Equipment

- 30 Emergency equipment is available throughout the 242-A Building. The locations of telephones, public
- 31 address systems, and alarms are given in the building emergency plan (Appendix 7A).
- 32 Major fire damage is unlikely at the 242-A Evaporator because of the concrete construction and because
- 33 the amount of combustible material is minimal. A temperature-activated water sprinkler system,
- 34 emergency lights, fire alarms pull boxes, and fire extinguishers are located throughout the facility. The
- 35 Hanford Fire Department is capable of providing rapid response to major fires at the 242-A Evaporator
- and its vicinity, with a fire hydrant located near the east side of the facility.
- 37 Safety showers are located in the areas where personnel are most likely to have direct exposure of
- 38 hazardous materials: in the AMU room and on the first and fourth floors of the condenser room. Water
- 39 for these devices is supplied from the sanitary water system. Self-contained breathing apparatus units are

- available in the control room for use throughout the 242-A Building. Respirators are located in the PPE
- 2 storage room near the entryway to the condenser room. Other PPE, such as hazardous material protective
- 3 gear and special work procedure clothing, are located in cabinets in the survey area. If required, PPE is
- 4 donned before entry into the rooms containing mixed waste. The level of personal protective equipment
- 5 required depends on the level of contamination in the area being entered and the activity being
- 6 performed.
- 7 A spill control kit is located in a cabinet near the door to the PPE storage room. An inventory of the
- 8 equipment in the spill kit is included inside the cabinet. The spill kit cabinet door seal is checked
- 9 monthly to ensure the kit has not been used. The kit inventory is inspected annually.
- 10 The 242-A Evaporator operating personnel are trained in the use of emergency equipment (Chapter 8.0).
- 11 Additionally, the Hanford Facility maintains a sufficient inventory of heavy equipment (e.g., bulldozers,
- 12 cranes, road graders) for emergency response.

#### 13 6.3.2.3 Water for Fire Control

- 14 Water for fire protection is supplied from the 200 East Area raw water system. Columbia River water is
- supplied to the fire control system from the 282-E Water Supply Reservoir. The water distribution
- system is sized to provide adequate volume and pressure to supply fire fighting needs under normal and
- emergency conditions. A fire hydrant is located approximately 10 meters east of the main entrance on
- 18 the east side of the 242-A Building.
- 19 In the event that the sprinkler system at the 242-A Evaporator does not put out a fire, or the sprinkler
- 20 system is damaged during an accident, each Hanford Fire Department fire station normally has a fire
- 21 engine, equipped with a hydraulically operated aerial ladder, available to fight the fire. A pumper (fire
- 22 engine without a boom) is used if the aerial ladder fire engine is inoperable. Fire engines have a pumping
- 23 capacity of at least 5,600 liters of water per minute.

### 24 6.3.3 Aisle Space Requirement [F-3b]

- 25 Sufficient aisle space is maintained on the exterior of the 242-A Evaporator to allow access of personnel
- and equipment responding to fires, spills, or other emergencies. Unobstructed fire lanes run from Fourth
- 27 Street and Canton Avenue to the 242-A Building main entrance to allow emergency vehicle access to the
- 28 main entrance and the nearby fire hydrant.
- 29 The 242-A Building interior aisle space is designed to allow access by emergency response personnel
- 30 while maintaining barriers to contain releases of gaseous or liquid waste and hazardous material.
- Walkways in the rooms containing mixed waste are checked daily to ensure the walkways have not been
- 32 obstructed by portable equipment, trash, etc.

#### 33 6.4 PREVENTIVE PROCEDURES, STRUCTURES, AND EQUIPMENT [F-4]

34 The following sections describe preventive procedures, structures, and equipment.

### 1 6.4.1 Loading and Unloading Operations [F-4a]

- 2 The feed transfer and slurry lines between the 242-A Evaporator and AW Tank Farm are constructed of
- 3 carbon steel piping with secondary containment and leak detection in a pipe-within-a-pipe arrangement.
- 4 Although the regulations exempt systems that serve as secondary containment from requiring secondary
- 5 containment, two of the drain lines from the 242-A Evaporator to AW Tank Farm also have outer
- 6 encasement piping and leak detection (refer to Chapter 4.0, Section 4.1.4, for information on these lines).
- Waste transfers within the 242-A Building are contained by the secondary containment walls, floors and
- 8 drains (refer to Chapter 4.0, Section 4.1.4, for information on secondary containment at the
- 9 242-A Evaporator).
- 10 There are no mixed waste storage containers loaded or unloaded at the 242-A Evaporator. Unloading
- operations occur when equipment contaminated with mixed waste exits the facility. Such materials are
- 12 fully sealed in plastic with absorbent material to absorb any free liquid present. Because of these
- requirements, the likelihood of a spill outside the 242-A Building during this operation is extremely low.

### 14 6.4.2 Run-Off [F-4b]

- 15 All liquid waste handling at the 242-A Evaporator occurs within tank systems with secondary
- 16 containment. All rooms containing mixed waste have drains that route to either the pump room sump or
- 17 the feed tank, 241-AW-102. The pump room sump overflows to the feed tank as well. Therefore, run-off
- from a major leak, such as a break in a large water line within the 242-A Building, would be contained
- within the facility or drained to the feed tank (refer to Chapter 4.0, Section 4.1.4 for information on
- 20 secondary containment and drain systems).

### 21 6.4.3 Water Supplies [F-4c]

- 22 Raw and sanitary Columbia River water are supplied to the 242-A Evaporator via separate underground
- 23 lines from the 282-E Water Supply Reservoir. Raw water is filtered to prevent organisms and other
- 24 debris from clogging valves, fire hydrants, and other equipment. Sanitary water is filtered and treated
- before distribution through a piping system separate from the raw water system.
- 26 The raw water supply to the 242-A Evaporator enters the 242-A-81 Water Service Building, passing
- 27 through a strainer and backflow preventer before entering the facility. The backflow preventer ensures.
- 28 contaminated water cannot flow back into the raw water system. A second backflow preventer is
- 29 installed in the 242-A Building on the raw water supply line connecting with the condensate recycle line.
- 30 This system allows either raw water or process condensate to be used for the pump seal water and
- deentrainment pad spray water without risk of contamination of the raw water system.
- 32 The sanitary water system provides water to the lunchroom, drinking fountains, men's and women's
- changerooms, safety showers, and supply ventilation system air washers. There are no connections
- 34 between sanitary water and any system or piping containing mixed waste.

### 35 6.4.4 Equipment and Power Failures [F-4d]

- 36 Standby power is provided by a diesel generator located southeast of the 242-A Building. The diesel
- 37 motor starts automatically on loss of electrical power and has sufficient fuel to operate the generator to

- safely shut down the evaporator process. An uninterruptible power supply system also is provided to
- 2 allow continued operation of the MCS computer to ensure uninterrupted monitoring until the emergency
- 3 generator is fully on line.
- 4 The 242-A Evaporator is designed to mitigate the effects of failure of a major piece of equipment. In
- 5 general, the evaporator process can be shut down and the vapor-liquid separator gravity-drained to the
- 6 feed tank, 241-AW-102, in the event of equipment failure. The process condensate tank, TK-C-100, is
- 7 designed to overflow to feed tank 241-AW-102. This mitigates failure of the process condensate pump
- 8 used to transfer the process condensate to LERF.
- 9 Response to equipment and power failures are discussed in more detail in the building emergency plan
- 10 (Appendix 7A).

### 11 6.4.5 Personnel Exposure [F-4e]

- 12 Facility design, administrative controls, and personal protective equipment are used at the
- 13 242-A Evaporator to prevent undue exposure of personnel to mixed waste and other hazardous materials.
- 14 The following features were incorporated into the 242-A Evaporator design to minimize personnel
- 15 exposure.
- The facility is designed for remote operation of equipment containing highly radioactive solutions
- such as waste feed and slurry. These solutions usually are present only in the pump room and
- evaporator room, which are heavily shielded and routinely are not entered by operating personnel.
- The 242-A Building ventilation system is designed to provide air flow from uncontaminated zones to progressively more contaminated zones.
- Emergency lighting devices are located strategically throughout the 242-A Building.
- Eyewash stations and safety showers are located in rooms containing mixed waste or other hazardous
- 23 materials that personnel routinely enter. For location of these, refer to the building emergency plan
- 24 (Appendix 7A).
- Continuous air monitors with audio and/or visual alarms to notify personnel of airborne radioactive
- 26 contamination are provided in rooms that contain mixed waste and that routinely are entered.
- Methods for decontaminating vessels and equipment are available to reduce personnel exposure if
- 28 entry for maintenance activity is required.
- Offices, control room, change rooms, and lunchroom are situated to minimize casual exposure of personnel.
- 31 All operations are conducted so employee exposure to mixed waste and other hazardous materials are
- 32 maintained ALARA. Exposures are minimized by engineering or administrative controls with protective
- 33 gear used where such controls are not practical. Before the start of any operation that might expose
- 34 personnel to the risk of injury or contamination, a review of the operation is performed to ensure the
- 35 nature of hazards that might be encountered are considered and that appropriate protective gear is
- 36 selected. Administrative procedures dictate the level of protective clothing worn and depend on the
- 37 location within the 242-A Building and the nature of the activity being performed. Personnel are trained
- 38 to wear personal protective equipment in accordance with approved work procedures.

# 1 6.5 PREVENTION OF REACTION OF IGNITABLE, REACTIVE, AND INCOMPATIBLE WASTE [F-5]

3 The following sections describe prevention of reaction of ignitable, reactive, and incompatible waste.

### 4 6.5.1 Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Waste [F-5a]

- 5 Administrative procedures are designed to prevent the ignition or reaction of waste at the
- 6 242-A Evaporator. The precautions include the following.
- Analysis is performed on candidate waste in the DST System to check that there are no exothermic reactions when the waste is heated and that there will be no adverse affects due to mixing the contents of different waste tanks in the feed tank and evaporator vessel (refer to Chapter 3.0,
- 10 Appendix 3A for details on waste analysis).
- Sample analysis of the candidate waste in the DST System includes a surface sample to identify the presence of a separable organic phase that might be ignitable. If a separate organic phase is detected, the waste solution level in the feed tank is maintained above 2.54 meters to prevent transfer of the
- 14 organic phase to the 242-A Evaporator.
- The condensate tank, C-100, is equipped with instrumentation to detect the presence of a separable organic phase. If a separate organic phase is detected, the tank is allowed to overflow, transferring the organic phase to the feed tank, 241-AW-102.
- No smoking is allowed anywhere in the 242-A Building.
- The vapor-liquid separator and the condensate tank are drained before any welding is performed.

# 20 6.5.2 Precautions for Handling Ignitable or Reactive Waste and Mixing of Incompatible Waste [F-5b, F-5b(1), and F-5b(2)]

- Waste received at the 242-A Evaporator is protected from materials or conditions that might cause the
- 23 waste to ignite or react. Much of the waste handling is done remotely to reduce the risk to operating
- personnel. For precautions taken to prevent the ignition or reaction of waste, refer to Section 6.5.1.
- The constituents in the waste received at the 242-A Evaporator that are ignitable or reactive are not very
- 26 volatile. Therefore, the evaporation process renders the waste that is evaporated (i.e., the process
- 27 condensate) neither ignitable nor reactive.

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Table 6-1. Visual Inspection Schedule for Tanks, Piping, and Rooms.

Item	Inspection	Frequency <sup>1</sup>	Responsible organization	Comments
	,1 Tank an	d Piping Inspection		
Condensate tank and piping	Inspect tank and piping for leaks, corrosion, or wear.	Daily	Op <del>e</del> rations	
	Roc	om Inspections		
AMU room	<ul> <li>Inspect tanks and piping for leaks, corrosion, or wear.</li> <li>Inspect floor for spills or damage.</li> <li>Inspect for equipment malfunctions.</li> <li>Inspect for housekeeping/aisle space.</li> </ul>	Daily	Operations	·
Pump room	<ul> <li>Inspect piping for leaks, corrosion or wear.</li> <li>Inspect floor for spills or damage.</li> <li>Inspect for equipment malfunctions.</li> <li>Inspect for housekeeping.</li> <li>Inspect pump room sump for overflow.</li> </ul>	Daily	Op <del>e</del> rations	Use viewing window in AMU room to perform inspection.
Loadout and hot equipment storage room	<ul> <li>Inspect piping for leaks, corrosion, or wear.</li> <li>Inspect sumps and floor for spills or damage.</li> <li>Inspect for housekeeping/ aisle space.</li> </ul>	Daily	Operations	Use viewing window in AMU room to perform inspection.

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Inspection Frequency<sup>1</sup> Responsible Item Comments organization Daily Use viewing window in AMU Loading room Inspect for housekeeping/aisle **Operations** space. room to perform inspection. Condenser room Daily Operations Inspect tanks and piping for leaks, corrosion, or wear. Inspect floors for spills or damage. Inspect for equipment malfunctions. Inspect for housekeeping/aisle space. IX column room Inspect piping for leaks, Daily **Operations** Surveillance is required only corrosion, or wear. when mixed waste is present in Inspect floor for spills or the column or piping.

Table 6-1. Visual Inspection Schedule for Tanks, Piping, and Rooms.

<sup>1</sup>Frequencies:

Continuously: an operator must be present in the control room to respond to alarms.

damage.

Daily: at least every 24 hours. Weekly: at least every 7 days. Monthly: at least every 31 days. Bimonthly: at least every 62 days. Biannually: at least every 184 days. Annually: at least every 365 days.

Item	Inspection	Frequency	Responsible organization	Comments
		Security		
Building external doors	Verify external doors are closed and locked.	Daily	Operations	Entrances to office areas are allowed to be unlocked.
Posted warning signs	Verify signs are present, legible, and visible at 7.6 meters.	Weekly	Operations	
Outdoor lighting	Verify outdoor lighting is sufficient.	Weekly	Operations	
	Com	munications		
Crash alarm telephone	Verify crash alarm telephone is operable.	Monthly	Operations	
Emergency sirens	Perform functional check to verify operability.	Monthly	Operations	
Radios	Verify radios are operable and batteries are charged.	Monthly	Operations	·
Telephones	Verify telephones are operable.	Quarterly	Operations	
Intercom/public address system	Verify systems are working properly.	Quarterly	Operations	
	Emerge	ency Equipment		
Safety showers/ eyewash station	Verify safety showers and eyewash station are operable.	Monthly	Operations	
Emergency lanterns	Verify emergency lanterns are operable.	Monthly	Maintenance	

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	Table 6-2. Inspection Schedule of S	Safety, Security, an	d Emergency Equipment.		Class Quart
Item	Inspection	Frequency <sup>1</sup>	Responsible organization	Comments	13 =
Fire extinguishers	Verify fire extinguishers are in their proper location with no signs of tampering.	Monthly	Operations		Modification Ending 03/31/
Spill response kit	Verify all equipment is present (from checklist in kit) with no signs of tampering.	Monthly	Operations		2001
Self-contained breathing apparatus (SCBA)	Verify shelf life of SCBA is current, no signs of tampering.	Monthly	Operations		
Personal protective clothing	Verify sufficient stock of clothing is available.	Weekly	Operations		
Full-face respirators	Verify shelf life of respirators are current and sufficient stock is available.	Monthly	Operations		

'Frequencies:

Continuously: an operator must be present

in the control room to respond to alarms.

Daily: at least every 24 hours. Weekly: at least every 7 days.

Monthly: at least every 31 days. Bimonthly: at least every 62 days. Biannually: at least every 184 days. Annually: at least every 365 days.

Table 6-3. In	spection	Schedule	for Alarm	Monitoring.
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Item	Inspection	Frequency <sup>1</sup>	Responsible organization	Comments
	Over	fill Protection		
Vapor-liquid separator: WFSH-CA11 WFSH-CA12	Monitor for vapor-liquid separator high level.	Continuously	Operations	Surveillance required only when solution is in the vapor-liquid separator.
•	. Lea	k Detection	<del>-</del>	
Feed transfer line: LDS-SN269 LDS-SN270	Monitor feed transfer line for leaks.	Continuously	Operations	Surveillance required only during feed line transfers.
Slurry transfer line: LDS-AW-SL	Monitor slurry transfer line for leaks.	Continuously	Operations	Surveillance required only during slurry line transfers.
Cleanout boxes: LDS-COBAW	Monitor cleanout boxes for leaks.	Continuously	Operations	Surveillance required only during slurry or drain line transfers.
Drain lines: LDS-AW-DR	Monitor drain lines for leaks.	Continuously	Operations	Surveillance required only during drain line transfers.
Sampler lines: LDS-SMPL1 LDS-SMPL2	Monitor feed and slurry sampler lines for leaks.	Continuously	Operations	Surveillance required only during feed or slurry sampling.
Pump room sump: WFI-SUMP1	Monitor for leaks in the evaporator room, pump room, loadout and hot equipment storage room and loading room. These rooms drain to the pump room sump.	Continuously	Operations	Surveillance required only when waste solution is present in the rooms listed.

<sup>1</sup>Frequencies:

Continuously: an operator must be present

in the control room to respond to alarms.

Daily: at least every 24 hours. Weekly: at least every 7 days. Monthly: at least every 31 days. Bimonthly: at least every 62 days. Biannually: at least every 184 days. Annually: at least every 365 days.

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Item	Inspection	Frequency	Responsible organization	Comments
	Instrumentation Fun	ctional Checks and Ca	librations	
Leak detectors	Perform leak detector functional checks.	Refer to comment	Maintenance/ Operations	Perform functional checks within 92 days of campaign startup and every 92 days thereafter until the campaign is over.
Vapor-liquid separator high level alarms: WFSH-CA11 WFSH-CA12	Perform calibrations of loop instruments.	Annually	Maintenance	
Pump room sump level: WFI-SUMP1	Perform calibrations of loop instruments.	Annually	Maintenance	
	Emergency	Electrical Equipment		
Diesel generator	Verify operability.	Monthly	Maintenance	
Uninterruptible power supply	Verify output voltage and inspect battery for signs of damage or tampering.	Annually	Maintenance	
	Cath	odic Protection		
Rectifiers	Check rectifiers for leaks, murky oil, signs of damage, or component degradation.	Bimonthly (62 days)	Maintenance	·
System operation	Verify operation meets NACE requirements.	Annually	Maintenance	

	Table 6-4. Inspection Schedule	e for Maintenance and	Other Inspections.	
Item	Inspection	Frequency <sup>†</sup>	Responsible organization	Comments
<u>-</u>	F	ire Systems		
Smoke detectors	Verify operability	Annually	Hanford Fire Department	
Pull stations	Verify operability	Annually	Hanford Fire Department	
Fire extinguishers	Verify that pressure is within proper range and verify unimpaired physical condition.	Annually	Hanford Fire Department	Refer to Table 6-2 for monthly inspection.
Fire hydrant	Check that hydrant is operational.	Biannually (182 days)	Hanford Fire Department	
Fire inspection	Walk down to check for fire extinguishers, access control, labeling, fire lanes, fire hydrants, etc.	Annually	Hanford Fire Department	Hanford Fire Department Checklist is used for the inspection.
	Oth	er Inspections		
Integrity assessment	Check integrity of vapor-liquid separator and condensate tank per IAR.	Refer to comment	Operations	The requirements and frequencies for integrity testing are given in the IAR (Appendix 4C).

<sup>1</sup>Frequencies:

Continuously: an operator must be present

in the control room to respond to alarms.

Daily: at least every 24 hours. Weekly: at least every 7 days.

Monthly: at least every 31 days. Bimonthly: at least every 62 days.

Biannually: at least every 184 days. Annually: at least every 365 days.

IAR = initial integrity assessment.

NACE = National Association of Corrosion Engineers.

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### 9.0 EXPOSURE INFORMATION REPORT

The 242-A Evaporator does not store, treat, or dispose of dangerous or mixed waste in a surface impoundment or landfill as defined in 40 CFR 270.10 and RCRA, Section 3019. Therefore, exposure information is not required.

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### 10.0 WASTE MINIMIZATION

2	To fulfill the requirements of 40 CFR 264.73(b)(9), a certification form that the 242-A Evaporator has a
3	waste minimization/pollution prevention program in place will be entered annually into the
4	242-A Evaporator operating record.
5	

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#### 12.0 REPORTING AND RECORDKEEPING

- 2 Reporting and recordkeeping requirements that could be applicable to the Hanford Facility are described
- 3 in Chapter 12.0 of the General Information Portion (DOE/RL-91-28). Not all of these requirements and
- 4 associated reports and records identified in Chapter 12.0 of the General Information Portion are
- 5 applicable to the 242-A Evaporator. Those reporting and recordkeeping requirements determined to be
- 6 applicable to the 242-A Evaporator are summarized as follows:
- Hanford Facility Contingency Plan and incident records (as identified in the General Information
   Portion):
- 9 Immediate reporting
- 10 Written reporting.
- Unit-specific Part B permit application documentation and associated plans
- Personnel training records
- Inspection records (unit)
- Land disposal restriction records
- Waste minimization and pollution prevention.
- 16 In addition, the following reports prepared for the Hanford Facility will contain input, when appropriate,
- 17 from the 242-A Evaporator:
- Quarterly Hanford Facility RCRA Permit modification report
- 19 Anticipated noncompliance
- 20 Required annual reports.
- 21 Annual reports updating projections of anticipated costs for closure and postclosure will be submitted
- when the 242-A Evaporator closure plan is submitted to Ecology (Chapter 11.0).
- 23 The 242-A Evaporator Operating Record 'records contact' is kept on file in the General Information file
- 24 of the Hanford Facility Operating Record (refer to DOE/RL-91-28, Chapter 12.0).

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Class 1 Modification Quarter Ending 03/31/2001	DOE/RL-90-42, Rev. 1A 03/2001
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Qu	arter En	ding 03/31/2001	03/2001
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, 	13.0	OTHER FEDERAL AND STATE LAWS [J]	13-1

Class 1 Modification

DOE/RL-90-42, Rev. 1A

Class 1 Modification Quarter Ending 03/31/2001	DOE/RL-90-42, Rev. 1A 03/2001
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### 13.0 OTHER FEDERAL AND STATE LAWS [J]

- 2 Applicable federal, state, and local laws applicable to the 242-A Evaporator are discussed in
- 3 Chapter 13.0 of the General Information Portion (DOE/RL-91-28). Generally, the laws applicable to the
- 4 242-A Evaporator include, but might not be limited to, the following:
- 5 Atomic Energy Act of 1954
- 6 Federal Facility Compliance Act of 1992
- 7 Clean Air Act of 1977
- 8 Safe Drinking Water Act of 1974
- 9 Emergency Planning and Community Right-to-Know Act of 1986
- 10 Toxic Substances Control Act of 1976
- 11 National Historic Preservation Act of 1966
- 12 Endangered Species Act of 1973
- 13 Fish and Wildlife Coordination Act of 1934
- 14 Federal Insecticide, Fungicide, and Rodenticide Act of 1975
- 15 Hazardous Materials Transportation Act of 1975
- 16 National Environmental Policy Act of 1969
- 17 Washington Clean Air Act of 1967
- 18 Washington Water Pollution Control Act of 1945
- 19 Washington Pesticide Control Act of 1971
- 20 New Source Construction Permits
- 21 Model Toxics Control Act
- 22 Benton Clean Air Authority Regulation I
- 23 State Environmental Policy Act of 1971.

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Class 1 Modification Quarter Ending 03/31/2001	DOE/RL-90-42, Rev. 1A 03/2001
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1 2 3		CONTE	INTS
4 5	15.0	REFERENCES	15-1

Class 1 Modification
Quarter Ending 03/31/2001

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- 4 DOE/RL-91-28, Hanford Facility Dangerous Waste Permit Application, General Information, updated
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- 9 DOE/RL-96-63, Annual Hanford Site Environmental Permitting Status Report, Rev. 0, U.S. Department
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- 12 Facility and 200 Area Effluent Treatment Facility, U.S. Department of Energy Richland Operations
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- 16 Ecology, 1993, Letter, 242-A Evaporator Restart, G. Anderson, Washington State Department of
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- 20 Ecology, 1996, Dangerous Waste Permit Application Requirements, #95-402, Washington State
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- 24 Vitro, 1974, Construction Specification for 242-A Evaporator-Crystallizer Facilities Project B-100,
- 25 B-100-C1, Automated Industries, Vitro Engineering Division, Richland, Washington.
- 26 WHC, 1990a, 242-A Evaporator Cooling Water Stream Specific Report, Addendum 21,
- WHC-EP-0342-21, Rev. 0, Westinghouse Hanford Company, Richland, Washington.
- 28 WHC, 1990b, 242-A Evaporator Steam Condensate Stream Specific Report, Addendum 26,
- 29 WHC-EP-0342-26, Rev. 0, Westinghouse Hanford Company, Richland, Washington.
- 30 WHC, 1994a, Characterization of Double Shell Tank for Evaporator 242 Project Tank 241-AP-101,
- 31 WHC-SD-WM-DP-051, Rev. 0 (with Addenda), Westinghouse Hanford Company, Richland,
- 32 Washington.
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- 37 WHC-SD-WM-DP-067, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

DOE/RL-90-42, Rev. 1A 03/2001

- 1 WHC, 1994d, Data Validation Report for 242A Evaporator Process Condensate, three reports: SDG
- 2 W0054-ITC-070, SDG W0069-ITC-078, SDG W0090-ITC-090, Westinghouse Hanford Company,
- 3 Richland, Washington.
- 4 WHC, 1995a, Data Quality Objectives for Tank Farms Waste Compatibility Program,
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- 6 WHC, 1996, Organic Emission Calculations for 242-A Evaporator Vessel Vent System,
- WHC-SD-WM-ES-380, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

8

1		APPENDICES
2	2A	TOPOGRAPHIC MAPS
3	3A	WASTE ANALYSIS PLAN FOR 242-A EVAPORATOR
4	4A	ENGINEERING DRAWINGS
5 6	4B	THE 242-A EVAPORATOR/CRYSTALLIZER TANK SYSTEM INTEGRITY ASSESSMENT REPORT
7	7A	BUILDING EMERGENCY PLAN FOR 242-A EVAPORATOR
8	8A	TRAINING
9		
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DOE/RL-90-42, Rev. 1A 03/2001

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APP-ii

Class 1 Modification: Quarter Ending 03/31/2001		DOE/RL-90-42, Rev. 1C 03/2001
1	APPENDIX 4A	
2	,	
3		
4	<b>ENGINEERING DRAWINGS</b>	
5		

### **ENGINEERING DRAWINGS**

**CONTENTS** 

4 5

6 The drawings in Table 4A-1 are process and instrumentation diagrams for the systems at the

10

7 242-A Evaporator that contact mixed waste. These drawings are provided for general information and to 8 demonstrate the adequacy of the design of the tank systems. An update to these drawings will be 9 provided annually to the Washington State Department of Ecology.

Table 4A-1. Process and Instrumentation Diagrams.

System	Drawing Number	Outstanding ECNs	Drawing Title
Vapor-Liquid Separator	H-2-98988 Sh. 1, Rev. 7	None	P & ID Evap Recirc System
Reboiler/Recirculation Line	H-2-98988 Sh. 2, Rev. 5	None	P & ID Evap Recirc System
Slurry System	H-2-98989 Sh. 1,Rev. 10	ECN-662012	P & ID Slurry System
Condensate Collection Tank	H-2-98990 Sh. 1,Rev. 10	None	P & ID Process Condensate System
Secondary Containment Drain System	H-2-98995 Sh. 1, Rev. 11	ECN-664301	P & ID Drain System
Secondary Containment Drain System	H-2-98995 Sh. 2, Rev. 5	None	P & ID Drain System
Condensers	H-2-98999 Sh. 1, Rev. 11	None	P & ID Vacuum Condenser System
Pump Room Sump	H-2-99002 Sh. 1, Rev. 5	ECN-647885	P & ID Jet Gang Valve System
Condensate Recycle System	H-2-99003 Sh. 1, Rev. 12	None	P & ID Filtered Raw Water System

11 12

ECN - engineering change notice.

P & ID - piping and instrumentation diagram.

13 14

1 The drawings in Table 4A-2 are for secondary containment systems for the 242-A Evaporator. Because

2 secondary containment systems are the final barrier for preventing the release of dangerous waste into the

3 environment, ECNs that affect the secondary containment systems will be submitted to the Washington

4 State Department of Ecology, as a Class 1, 2, or 3 permit modification, as required by

5 WAC 173-303-830.

6

Table 4A-2. Drawing of 242-A Evaporator Secondary Containment Systems.

System	Drawing Number	Outstanding ECNs	Drawing Title
242-A Building	H-2-69277 Sh 1, Rev 2	None	Structural Foundation Plan Sections & General Notes - Areas 1 & 2
	H-2-69278 Sh 1, Rev 3	None	Structural Foundation Elevations & Details - Areas 1 & 2
	H-2-69279 Sh 1, Rev 3	None	Structural First Floor Plan & AMU - Areas 1 & 2
Pump Room Sump Drainage	H-2-69352 Sh 1, Rev 4	ECN-121216 ECN-121238 ECN-194242 ECN-610629 ECN-620353	Sections Process Waste Drainage
242-A Building Drainage	H-2-69354 Sh 1, Rev 4	ECN-194242 ECN-610629 ECN-620353	Plan Process Waste Drainage
Pump Room Sump	H-2-69369 Sh 1, Rev 1	None	Pump Room Sump Assembly & Details

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Class 1 Modification: Quarter Ending 03/31/2001		DOE/RL-90-42, Rev. 1C 03/2001
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### **APPENDIX 4A**

### **ENGINEERING DRAWINGS**

Outstanding ECNs

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### ENGINEERING CHANGE NOTICESSENTIAL 134, 13B

1. ECH 662012

Proj. ECN

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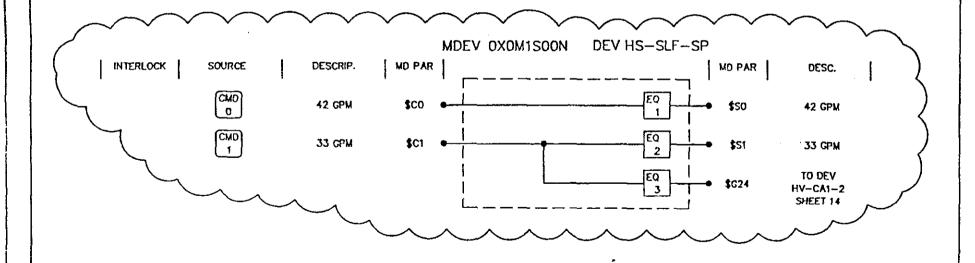
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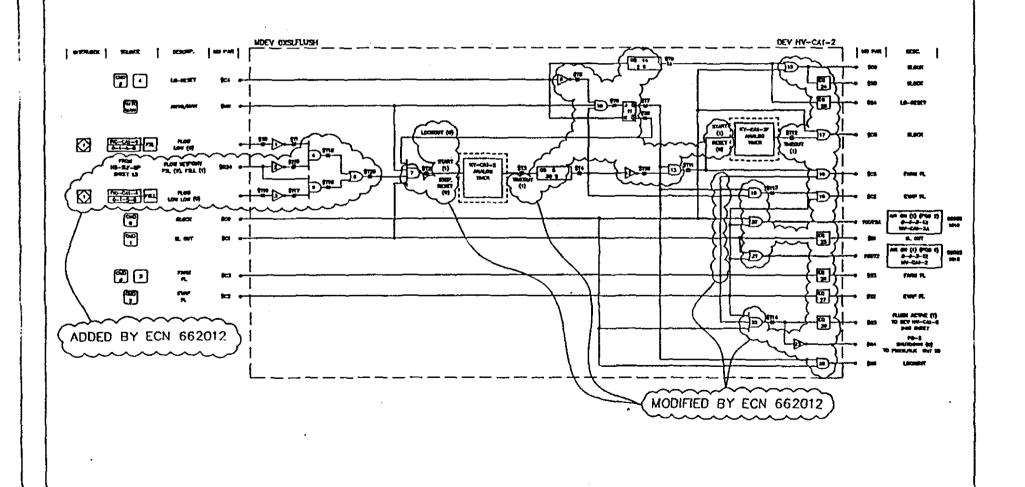
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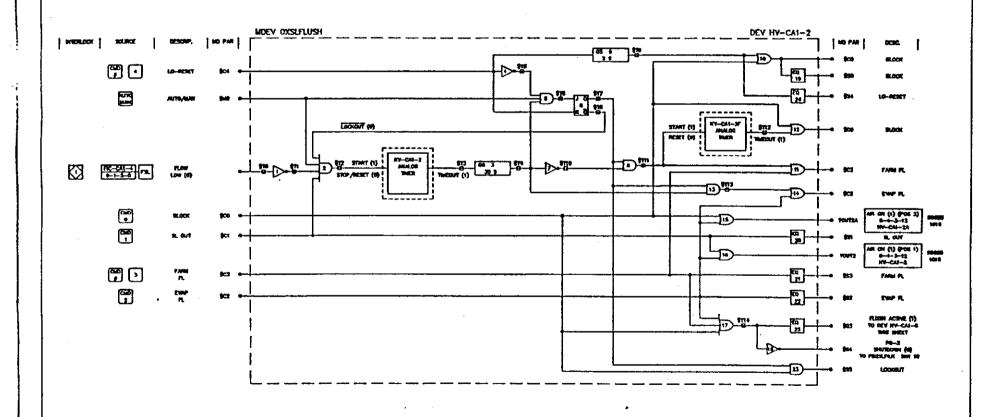
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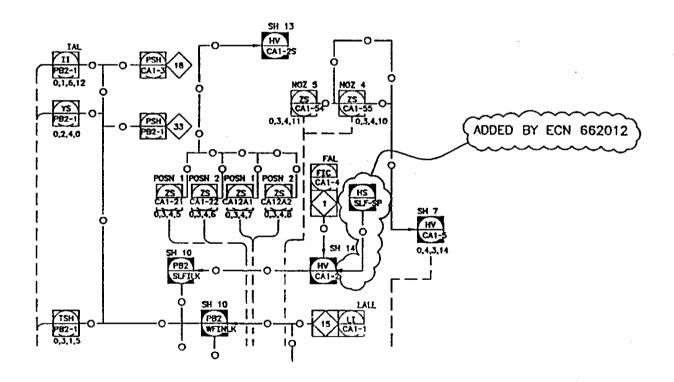


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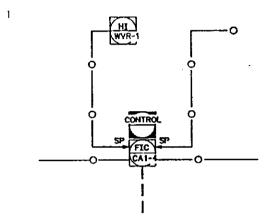
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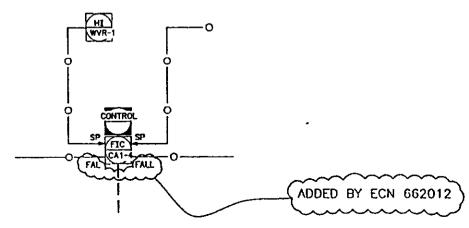
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Document TO-600-010,	Number/Rev Rev. N-0		Docum	ent Number/Re	vision	<b>.</b>	Docum	ent Number	/Revision	:
21. Approvals	Signature		Date				Signature		Da	te
Design Authority E.	A. McNama	E.A. The	Ham 2-1-01	Desig	n Age	nt <u>E.</u>	A. McNamar K. N.m.	<del></del>	2-1-	اه_
Cog. Eng. E. A. Me	Namar 1.A	mola	2-1-01	PE	_					
Cog. Mgr. N. J. S	ullivan 7	Jul =	2-5-01	QA	_					
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ECN664301 Page 30f5

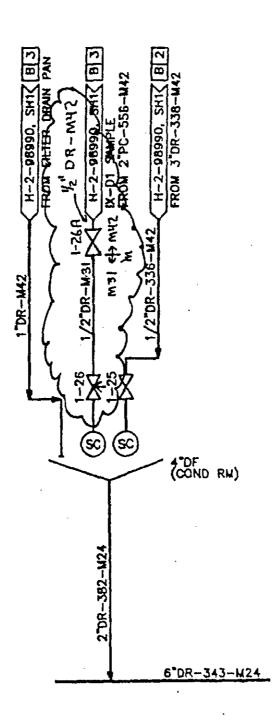
	Hanford NEPA Screening Form  For NEPA requirements, see HNF-PRO-452  Answer questions YES or NO, and last NUMBER if applicable.
	Answer questions YES or NO, and list NUMBER if applicable.
Work Item Title	Sample Valves at 242-A
Work Package Number	EL 01 00073 M
Project Description: (pla	
	alves downstreama of existing valves 2-20 (used raw water) and
1-20 (ploces	s condensate).
A	INTEGRAL ELEMENTS
C Yes & No	Will work threaten to violate environmental laws, regulations, permits, or safety requirements?
Cyes @ No	Will work involve construction/expansion of waste treatment, storage, disposal facilities?
C Yes @ No	Will hazardous substances be disturbed allowing uncontrolled/unpermitted releases?
go to H	
В	ECOLOGICAL RESOURCES
O Yes O No	Will work affect Wetlands/Aquifers/ALE Reserve?
C Yes @ No	Will work occur within 1/4 mile of Columbia River (Hanford Reach National Monument)?
C Yes © No	Will wildlife or natural habitat be disturbed?
	(10 C) If any answer is YES, get Ecological Review, NUMBER: 1
C	CULTURAL RESOURCES  Does the work require excavations or surface disturbing activities? Obtain permit if required.
C <sub>Yes</sub> € No	
C yes € No	Does the work require building or equipment modifications to listed historic structures?
If all answers are NO, an	id all conditions have been met and the SWCX applies, 30 to 11, If any answer is YES, a Cultural Resources Review is required.
List review NUMBER:	NOTE: If adverse impacts are identified, to to
D	SITE-WIDE CATEGORICAL EXCLUSION (SWCX)
C Yes @ No	In evaluating potential environmental impacts, was Waste Minimization considered? See HNI-PRO-462.
€ Yes C No	Is the work covered by a SWCX?
If YES, list SWCX that a	applies B1.3 Routine Maintenantin form and sign; if NO. (10.10)
E	SITE-WIDE CX DOES NOT APPLY
0 0	Does other DOE approved NEPA documentation apply for this activity? If yes provide applicable document number
C Yes C No	DOE/EA- DOE/EIS- Other-
If CX or EA preparation	may be needed, contact FH ES 376-4373.
Signature	SWCX is not valid until any applicable Cultura/Ecological Resource Reviews are received and attached to this form.
Reviewer 2	(Initiator, Cog. Engineer., Scheduler, Planner)  Phone  Of an activity under review in an HAVEIS.  MAINTAIN A COPY IN THE
Concurrence	Manager, Env. Compliance Officer, FH ES;
	A-6001-497 (11700)

### ENGINEERING CHANGE NOTICE CONTINUATION SHEET

Page 4 of 5

ECN 664301 Date 2/5/01

ON H-2-98995, SH 1, REV. 11, ZONE C/D-2, MODIFY SAMPLE VALVING AS SHOWN IN CLOUDED AREA, BELOW:

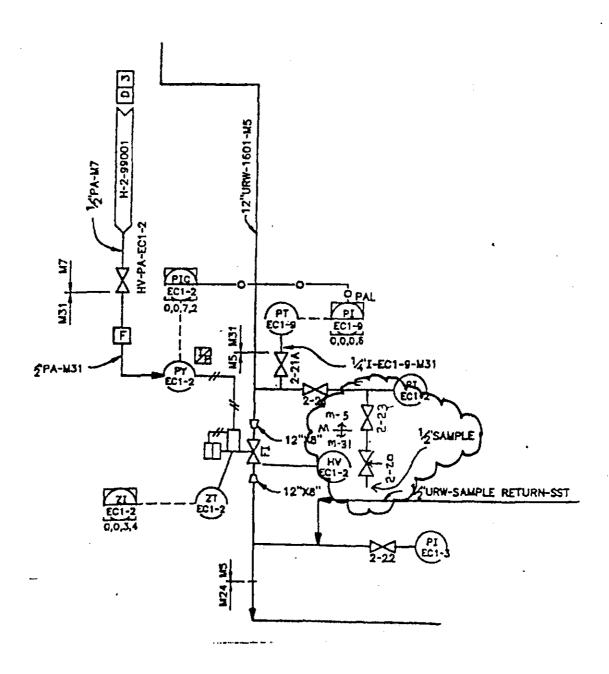


### ENGINEERING CHANGE NOTICE CONTINUATION SHEET

Page <u>5</u> of <u>5</u>

ECN 664301 Date 2/5/01

ON H-2-98994, SH 1, REV. 10, ZONE B-7, MODIFY SAMPLE VALVING AS SHOWN IN CLOUDED AREA, BELOW:



### ENGINEERING CHANGE NOTICE ESSENT 13 A , 13.B

.1. ECN 647885

Proj.

2. ECN Category		e, Organization, MSIN,	4. USQ Required?	5. Date
(mark one) Supplemental IX	and Telephone No. TM GALIOTO, 32 4894	230, S6-72, 373-	[X] Yes [] No Lw-98-025	06-15 <b>-</b> 98
Direct Revision [] Change ECH []	6. Project Title/No.	'Alask Ander No	7. Bldg./Sys./Fac. N	9 4
Temporary []	ļ		1	
Standby D Supersedure D		-5 UPDATE	242A/200E	· NA
Cancel/Void []	<ol><li>9. Document Numbers (includes sheet r</li></ol>	Changed by this ECN	10. Related ECH No(s)	). 11. Related PO No.
• .		LOCK 13A	NA NA	NA NA
12a. Modification Work	12b. Work Package	12c. Modification Work	Complete 12d. Re:	stored to Original Condi-
rva :	No.			emp. or Standby ECN only)
[X] Yes (fill out Blk. 12b)	EL-97-00531		NA	•
No (NA Blks. 12b,		Design Authority/Cog.	Fngineer Desig	n Authority/Cog. Engineer
12c, 12d) ·		Signature & Da		Signature & Date
13a. Description of Change		13b. Design Baseline	Document? [X] Yes	[] No
1-2-99002 SH1 REV 5		•	•	
SEE PAGE 4 THIS EC	4		•	•
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14a. Jústification (mark o	· · · · ·	ra .	<b>63</b>	· · · · · · · · · · · · · · · · · ·
Criteria Change [X]	Design Improvement	[] Environmental	===	ility Deactivation []
s-Found	Facilitate Const	[] Const. Error/O	mission [] Des	ign Error/Omission []
14b. Justification Details The proceine tran		onger used or requ	ired It is hei	no physically
removed from servic	re. The lines t	o and from the pre	ssure transmitte	r will be capped.
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15. Distribution (include				KELEASE STATE
TM GALIOTO S6-72° NJ SULLIVAN S6-72		EIS S6-71 EBER S6-71		JUN 3/0 1998
NJ SULLIVAN S6-72 JE GEARY S6-71		· ADVANCED COPY	DATE	
J ISDELL S6-17			Cr-22	J MANFORD [
MW BOWMAN S6-72	700	C PUNNNING.	91/0	RELEASE 3 10:
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					1. ECN (use no.	. from pg. 1)
E	IGINEERING C	HANGE NO	TICE	Page 2 of	i	•
16. Design	17. Cost Impact				18. Schedule Impact	(days)
Verification Required	ENGI	ieer i ng	CO	STRUCTION		
[X] Yes	Additional .	[] \$	Additional	[] \$	Improvement	
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19. Change Impact R	eview: Indicate	the related d	ocuments (other the	n the engineering	documents identified o	n Side 1)
that will be af			in Block 13. Ente sic/Stress Analysis		cument number in Block : Tank Calibration Manual	
Functional Design Criteria	. []		s/Design Report	[]	Health Physics Procedure	
Operating Specification	. []		ace Control Drawing	. LJ	Spares Multiple Unit Listin	(1)
Criticality Specification	[]		ation Procedure	L J En	Test Procedures/Specifica	- LJ
Conceptual Design Repor		•	ation Procedure	[]	Component Index	LJ
Equipment Spec.	. LJ		enance Procedure	LJ.	' ASME Coded Item	<b>}</b> }
Const. Spec.	. LJ	Engin	sering Procedure	[]	Human Factor Considerati	נו רו חסי
Procurement Spec.	[]	-	ting Instruction	[]	Computer Software	[]
Vander Information	LJ LJ	Opera	ting Procedure	[X]	Electric Circuit Schedula	[]
OM Manual	. [1	Opera	tional Safety Requiremen		ICRS Procedure	רֹז
FSAR/SAR	רו	IEFO I	Ora wing	ij	Process Control Manual/Pl	
Safety Equipment List	ัก ั	Cell A	rrangement Drawing	. וֹזֹ ·	Process Flow Chart	[]
Radiation Work Permit	ก้า	Essen	tial Material Specificatio	י וֹז	Purchase Regulation	Ö
Environmental Impact Sta	rtement []	. Faç. F	roc. Samp. Schedule	កែ	Tickler File	či
Environmental Report	ñ	insper	ction Plan	. []	None	ČĨ
Environmental Permit	ĒĴ	Înveni	tory Adjustment Request	ČĴ		īj .
indicate that t		zation has be	listed below will r en notified of othe Occument Number/Rev	r affected docume	this ECN.) Signatures b nts listed below. Document Number Re	
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21. Approvals					4	
( m	Signature	A.D.	Date	Si Design Agent	gnature	Date
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				Signature or a Co tracks the Approv		
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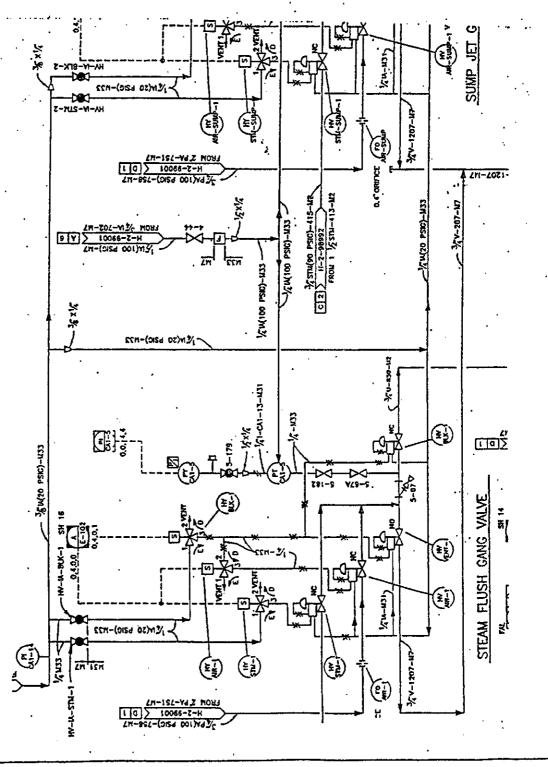
**ENGINEERING CHANGE NOTICE CONTINUATION SHEET** 

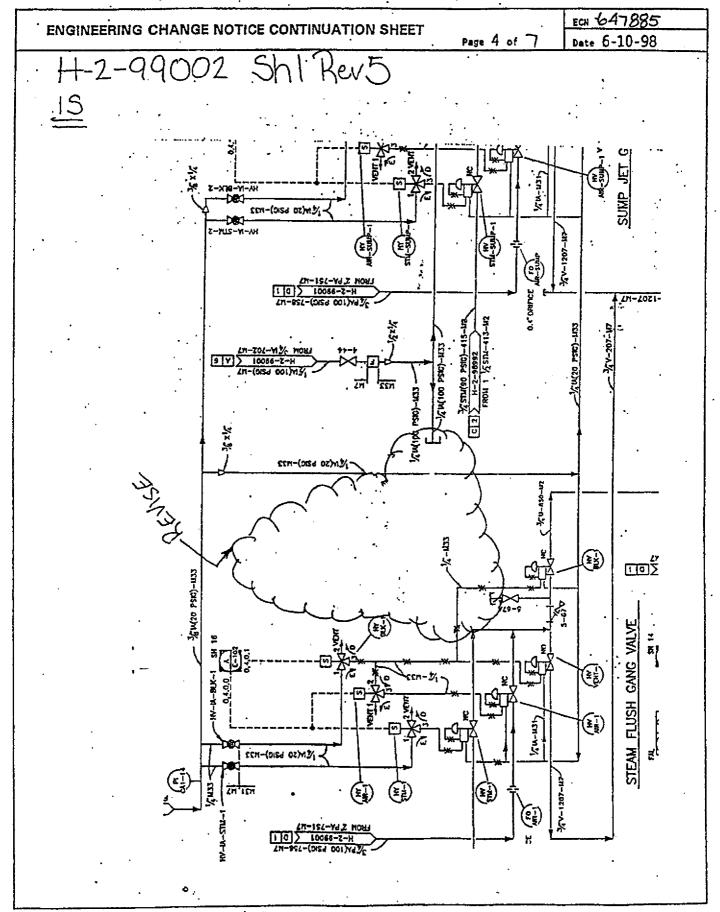
Page 3 of 7

ECN 647885 Date 6-10-98

H-2-99002 Sh1 Rev5

WAS





ECN 647885 PAGE 5 OF 7

#### **USQ EVALUATION**

Page 1 of 3

PT-CA1-5 Modification

Identification Number: LW-98-025

Facility: 242-A Evaporator .

ECN No. 647885

PCA No.

Work Pkg No. EL-97-00531

Other (Specify)

TITLE: PT-CA1-5 Modification

Description of the proposed activity/reportable occurrence or PIAB:

The pressure transmitter PT-CA1-5 is no longer used or required for process operations. This instrument was the pressure transmitter for the steam flush of the slurry line. and is not working and will be removed. The lines to the pressure transmitter will then be capped.

The pressure transmitter was removed for calibration and unable to be Introduction: calibrated or repaired. It was put into service then and not available for use. This pressure transmitter will be removed and have the lines leading to it capped. The pressure switch and associated equipment will be removed as well. The 242A authorization basis does not describe the details of the pressure transmitters nor does it contain any accidents pertaining to the transmitters.

Scope: This USQ document analyzes the impact of removing the PT-CA1-5 pressure transmitter and its associated equipment.

Authorization basis: The Authorization Basis for the 242-A Evaporator is the 242-A Evaporator Safety Analysis Report, HNF-SD-WM-SAR-023, Rev. 3 (SAR). The pressure transmitter is included in Table 5-4, which lists the applications of instrument air at the Evaporator. This is the only discussion of the steam flush contained with the SAR.

Steam supply and distribution are discussed in section 5.4.5 of the SAR. Steam flushing is mentioned, but flushing of the slurry line is not specified. This section further states that "Steam supply is not a Safety Class/Safety Significant system nor is it required to mitigate environmental releases".

Compressed air is discussed in Section 5.4.4 of the SAR. This section states that "Compressed air is not a Safety Class or Safety Significant system nor is it required to mitigate environmental releases."

The slurry system is described is section 6.4.1.2. Slurry line flushing is discussed in section 6.4.1.2.9, but only includes flushing with water or a chemical solution from the decontamination header. Flushing using steam is not mentioned.

Conclusion: No DOE approval is necessary. This change may be made at contractor discretion.

ECN 647885 PAGE 60F 7

Identification Number: LW-98-025

#### **USQ EVALUATION**

Page 2 of 3

Title: PT-CA1-5 Modification

References: None outside the Authorization Basis.

Does the PROPOSED CHANGE, test, experiment or DISCOVERY increase the probability of occurrence of an accident previously evaluated in the AUTHORIZATION BASIS documentation?
[X] No [] Yes/Maybe

BASIS: Accident analysis is contained in Section 9.3 of the SAR. There are no accidents associated with the pressure transmitters or slurgy line flushing at the 242A Evaporator. Therefore the proposed change does not increase the probability of an accident previously evaluated in the Authorization basis document.

2. Does the PROPOSED CHANGE, test, experiment or DISCOVERY increase the consequences of an accident previously evaluated in the AUTHORIZATION BASIS documentation?
[X] No [] Yes/Maybe

BASIS: Accident analysis is contained in Section 9.3 of the SAR. There are no accidents associated with the pressure transmitters or slurry line flushing at the 242A Evaporator. Therefore the proposed change does not increase the consequences of an accident previously evaluated in the Authorization basis document.

3. Does the PROPOSED CHANGE, test, experiment or DISCOVERY increase the probability of occurrence of a malfunction of EQUIPMENT IMPORTANT TO SAFETY (ITS EQUIPMENT) previously evaluated in the AUTHORIZ TION BASIS documentation?

[X] No [] Yes/Maybe

BASIS: The Preliminary Hazards Assessment is described in Section 9.2 of the SAR and summarized in Tables 9-4 through 9-8. None of these scenarios rely on slurry line steam flushing or instrumentation associated with steam flushing. Therefore, the proposed change does not increase the probability of a malfunction of ITS equipment as previously evaluated in the Authorization Basis.

4. Does the PROPOSED CHANGE, test, experiment or DISCOVERY increase the consequences of a malfunction of ITS EQUIPMENT previously evaluated in the AUTHORIZATION BASIS documentation?

[X] No [] Yes/Maybe

BASIS: The Preliminary Hazards Assessment is described in Section 9.2 of the SAR and summarized in Tables 9-4 through 9-8. None of these scenarios rely on slurry line steam flushing or instrumentation associated with steam flushing. Therefore, the proposed change will have no effect on the consequences of an ITS equipment malfunction.

5. Does the PROPOSED CHANGE, test, experiment or DISCOVERY create the possibility of an accident of a different type than any previously evaluated in the AUTHORIZATION BASIS documentation?

[X] No 

[] Yes/Maybe

BASIS: Steam flushing of the slurry line has not been performed in the recent past, and it is unlikely to be required in the future. As previously stated, neither the steam system nor the compressed air system are required for safety or environmental purposes. As the pressure transmitter is an air operated instrument on a steam line, removal of this instrument cannot create a new type of accident, but rather will decrease the potential for operational upset if the instrument were to malfunction during use.

ECN 647885 AGE 70F

Identification Number: LW-98-025

#### **USQ EVALUATION**

Page 3 of 3

Title:	PΤ	-CA1	-5	Modi	fi	cat	i	or
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6. Does the PROPOSED CHANGE, test, experiment or DISCOVERY create the possibility of a malfunction of ITS EQUIPMENT of a different type than any previously evaluated in the AUTHORIZATION BASIS documentation?
[X] No
[] Yes/Maybe

BASIS: Steam flushing of the slurry line has not be performed in the recent past, and it is unlikely to be required in the future. As previously stated, neither the steam system nor the compressed air system are required for safety or environmental purposes. As the pressure transmitter is an air operated instrument on a steam line, removal of this instrument cannot create a new type of ITS equipment malfunction. It will, however, decrease the potential for operational upset if the instrument were to malfunction during use.

7. Does the PROPOSED CHANGE, test, experiment or DISCOVERY reduce the margin of safety as defined in the basis for any Technical Safety Requirement?
[X] No
[] Yes/Maybe

BASIS: Operational Safety Requirements (OSRs) and their bases sections are specified in Chapter 11 of the SAR. The proposed change will not decrease the margin of safety for any OSR as described in its basis. There are no OSRs associated with the pressure transmitter or slurry line flushing as defined in the Authorization basis document.

8. Does the PROPOSED CHANGE, test, experiment or DISCOVERY require a new or revised Technical Safety Requirement?

[X] No .[] Yes/Maybe

BASIS: The removal of the pressure transmitter will have no effect on the OSRs for the 242A Evaporator.

USQE #1 TM GALIOTO

USGE #2 MD GUTHRIE

(Print Name)

N 10

(Print Name)

Signature

0-24-48

Signature

Date.

1	ENGINEERING CHANGE NOTICE	ے۔ Pa	>  ge101 <u>2</u>	A. ECN. 121216 Proj. PERE GROV
2. ECN Category (mark one) Supplemental Prect Revision	3. Originator's Name, Organization, MSIN, and Telep N.A. HERTELENDY 82331 HD-047	•	5-4010	4. Date 3-27-90
hange ECN	S Project Title No. A YOUR OIS OIS OF A IP TE-90-026 WB7 CE	6. 8idg sys. 242-		7. Impact Level . 3
Supersedure 🔯 Discovery 🔲 Cancel/Void 🔲	8. Document Number Affected (include rev. and sheens.) H-2-69 352 SHT-1 Rev A		CN No(s). 21212	10. Related PO No.
11a. Modification Work  Yes (fill out Blk, 11b)  No (NA Blks, 11b, 11c, 11d)	11b. Work Package Doc. No. 2E-89-01979/W Cog. Engineer Signatu	1	· · · · · · · · · · · · · · · · · · ·	Restoration (Temp. ECN only) :: :: ::eer Signature & Date
12. Description of Change	yed off inspection	Port to	Drain	line at the
"Elbow", as	4" schedule 40 Per ASTY	Black A53: Typ	Steel e E Gr	Pipe 8"Ing. RADE B
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13a. Justification (mark one) Criteria Change Désign Improvement Environmental As-Found Facilitate Const. Const. Error/Omission Design Error/Omission	The originally designed could Not be inst Elbow it was to repind the wall.	عالعظ 6	écause	The 900
14. Distribution (include name  G.T. Frater  10. A. Hertel  R. Sederbur  T. Gearge  T. Gearge  T. Wicheles  R. Liur E	52-02 Ludy 52-02		OFFICIAL BY W DATE M	RELEASE (F) NHO AR 29 1990 ELOTI 3

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1	8.5	ENGI	NE	ERING CHANGE NO	TICE .		Page 2 of 2	12	1216
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Γ	18 Change Impact Revi	ew: Indicate the	rela	ted documents (other than th	se engineerini	c docum	ents identified on Sig	e 1) that w	ill be affected by
ŀ	the change describe	d in Block 12. En	ter t	he affected document number	er in Block 19.				Je direction by
l	500/00			SeismicStress Analysi	\$		Tank Calibratio	n Manual	
ı	Functional Design Ca	riteria		Stress/Design Report			Health Physics I	rocedure	ī
ŀ	Operating Specificat	tion		Interface Control Dra-	wing		Spares Multiple	Unit Listing	, 🗂
ı	Criticality Specificati	on		Calibration Procedure	<b>:</b>		Test Procedure:	Specificati	on 🗍
l	Conceptual Design R	leport		Installation Procedure	<b>:</b>		Component Ind	ex	
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l	Procurement Spec.	•	╬	Operating Instruction			Computer Softv		
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l	FSAR/SAR		Ц	IEFD Drawing		□	Process Control		^ _
	Safety Equipment Li		닏	Cell Arrangement Dra			<ul> <li>Process Flow Ch</li> </ul>		
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'	organization has bee	ments: (NO) E: )	Jocu eraf	iments listed below will not b ffected documents fisted belo	e texized by ti	nis ECN.)	Signatures below in	dicate that	the signing
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600.314	ENGINEERING CHANGE NOTICE	55/CELA Page 1 of _2_	Proj.
2. ECN Category (mark one) Supplemental .	3. Originator's Name, Organization, MSIN, and Telephone I N. A. Hardeleusty BZ \$3: SZ-02.	NO. 7 - 4010	4. Date 5-2-9-9-
hange ECN	5. Project TitlerNo Avork Order No. Drain	6. Bidg./Sys./Fac. No.	7. Impact Level -
Temporary  Supersedure  Discovery	8. Document Number Affected (include rev. and sheet	2 4 2 - A  9. Related ECN No(s).	10. Related PO No.
Cancel/Void	100) H-Z-69352 SHT-1 REV-4	121237	
11a. Modification Work  ☑ Yes (fill out Blk. 11b)  ☐ No (NA Blks. 11b,	11b. Work Package Doc. No. 2 E - 89-01979		Restoration (Temp. ECN only)
11c, 11d) 12. Description of Change	This ECN Supersules, ECN 12		ineer Signature & Date
Changes Ed	EN 121216 in part.	.7 2 3 7 10 173	enviren La
1.) 150# RE	= Flange Per ASTM A 105	(Was As	TM A-216) .
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3.) Crasket	should be 1/8" thk	(No thick	enes was given)
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13a. Justification (mark one) Criteria Change	13b. Justification Details  Asket Thickness was	ust siver	and Flance
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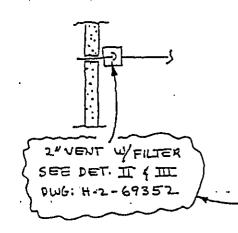
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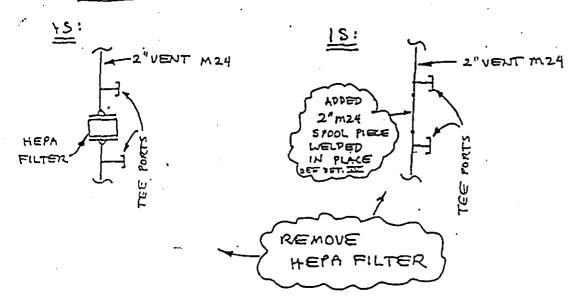
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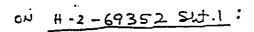


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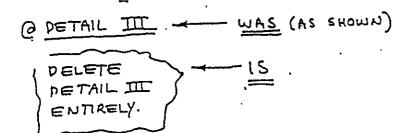
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page 4 66 1-



### ) DETAIL II :

REPELENCE DETAL IV. THIS ECN ?

### DETAIL IN

<u>was</u>

CUT OUT HEPA INSTALLATION & PIPING TO CONFIGURATION SHOWN BELOW

REMOVE PLANABOVE FROM PRAWING; CALL NOTATION

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HIGH EFF. FILTER 8"41" x 3 "1" HPS -151 (TYPE --)

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### 15:

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TYP. 2 PLCS. WELD PER B31.3, VISUAL INSPECT FINAL PASS. NO QC REQ'D.

CATEGORY III WELD.

### FILE GUDY

### ENGINEERING CHANGE NOTICE

1. ECN 61062

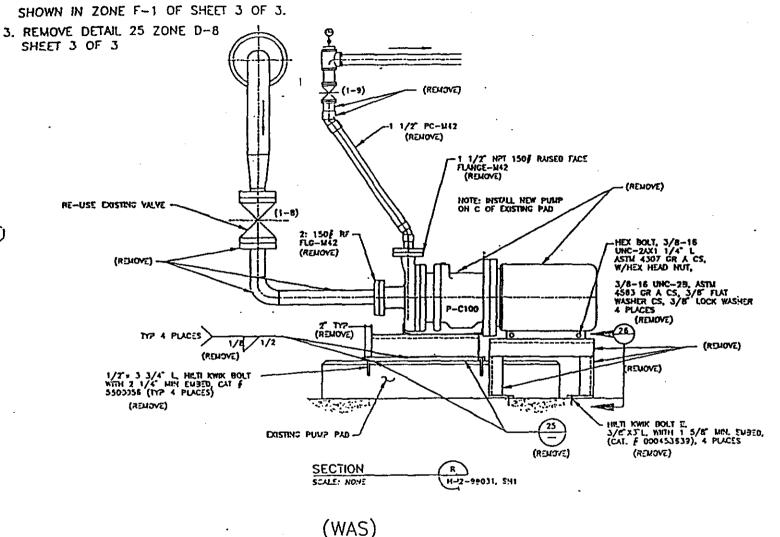
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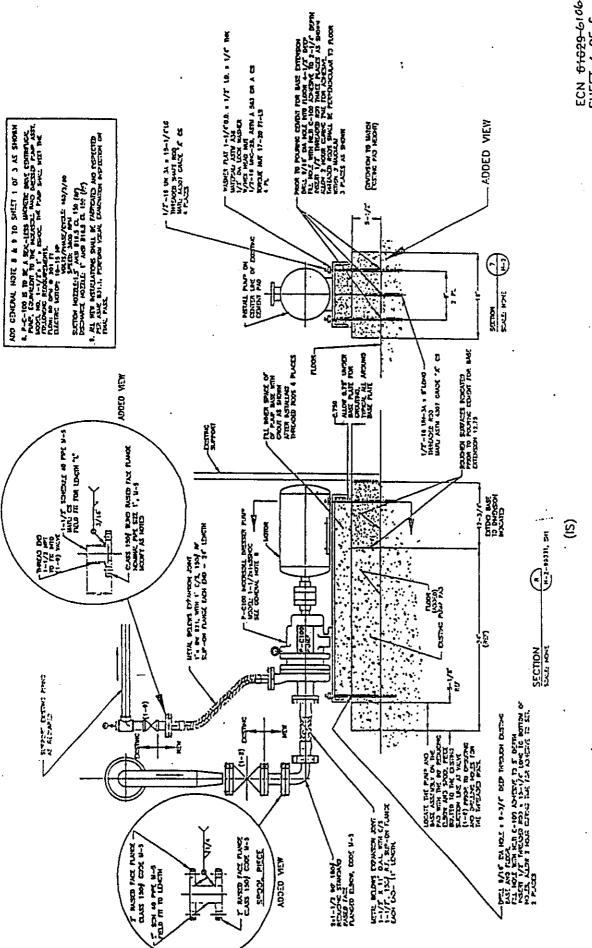
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REMOVE EXISTING KONTRO PUMP AND ASSOCIATED PIPING AS SHOWN FROM 242-A CONDENSER ROOM BASEMENT

2. REMOVE MOTOR FRAME IN ITS ENTIRETY AS INDICATED AND VIEW (26) FROM FACE OF DRAWING



ECN 61029-610629 SHEET 3 OF 6



### UNREVIEWED SAFETY QUESTION SAFETY REVIEW FORM (Per WHC-IP-0842, 15.9)

Page 5 of 6

REFERENCE DOCUMENT(S):

ECN No. 610629

PCA No. N/A

Work Pkg No.

Other (Specify)

TITLE: REPLACE EXISTING KONTRO C-100 PROCESS CONDENSATE PUMP WITH THE EQUIVALENT

INGERSOLL DRESSER PUMP.

#### BACKGROUND:

The C-100 Process Condensate Pump is used to pump the process condensate from the 242-A Evaporator to the LERF facility.

The existing C-100 Process Condensate Pump manufactured by KONTRO PUMP CO. has a history of failure while operating in the 242-A Evaporator. The failure are the result of a marginal none-coupling design between the electric drive motor and the pump drive shaft and the result of the hard plumbing at the suction and discharge flanges of the pump. This induces torisonal piping loads into the pump body to cause the pump to bind and seize. The installation of the new INGERSOLL DRESSER RAND PUMP with its positive coupling between the electric motor drive and pump drive shaft, combined with flexible bellows at the suction and discharge lines of the pump will eliminate the present hard line plumbing problem to resolve the present pump failure occurrence. The replacement pump will perform the same function as the existing pump.

#### Does the PROPOSED CHANGE:

Α.	Represent	a change	to the facility as	described in the	<b>AUTHORIZATION BAS</b>	IS documentation?
	[] N/A	[X] No	[] Yes/Maybe		•	

Basis: The detail design is not discussed in the AUTHORIZATION BASIS, (WHC-SD-WM-SAR-023, Rev 1B, Chap 5 and 11; WHC-SD-SEL-028, Rev 0, Sec 4.1). Replacing the present KONTRO pump with the INGERSOLL pump will improve the reliability of the C-100 pump operation in the 242-A Evaporator, therefore this pump replacement does not represent a change to the facility as described in the AUTHORIZATION BASIS.

В.	Represent a	change to	procedures	as describ	ed in the	AUTHORIZA	TION BASIS?
			_				

[X] No [] Yes/Maybe [] N/A

Basis: This pump replacement will not require any procedure changes to be performed, therefore this pump replacement does not represent a change to procedures described in the AUTHORIZATION BASIS.

C. Represent a test or experiment not described in the AUTHORIZATION BASIS documentation?

[] N/A [X] No [] Yes/Maybe

Basis: This pump replacement does not represent a test or experiment.

D. Does the change impact:

• Implemented OSRs or IOSRs? [] N/A · [X] No [] Yes/Maybe

 Approved IOSR Compliance Implementation Plans? [X] N/A [] Yes/Mayba

ECN NO. 610629

### UNREVIEWED SAFETY QUESTION SAFETY REVIEW FORM (Continued)

Page Sof 6

Basis: The new INGERSOLL PUMP provides the same function as the existing pump therefore changes to the 242-A LCOs will not be required, (WHC-SD-WM-SAR-023, Rev 1B, Chap 11).

Based on the above, a Safety Evaluation need to be performed for this change

[j does | | Does not

USQE No. 1 DS Haring

USQE No. 2 VA Smith

Print Name

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Print Name

Signature

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### ENGINEERING CHANGE NOTICE

ESSENTIAL

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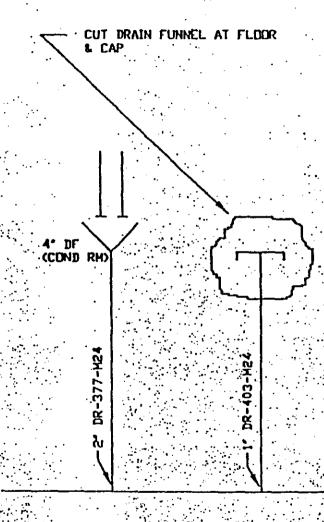
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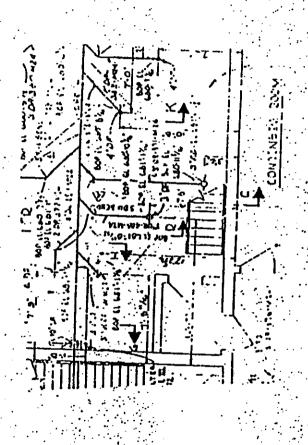
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Direct Revision [] Change ECN [X]	5. Project Title/No.		6. Bldg./Sys	./fac. No.	7. Approval Des	ignator
Temporary [] Standby [] Supersedure []	PC100 PUMP	REPLACEMENT	242A/PF		NA NA	
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[X] Yes (fill out Blk.	EE-94-711			NA		
[] No (NA Biks. 11b,		Cog. Engineer Signatu	re & Date .	Cog. Eng	ineer Signature &	Date
12. Description of Change ECN #610629 SHEET AROUND THE TANK. FLOOR AS SHOWN ON	ALSO, THE 1" DRA	IN LINE WILL BE PL				
DRAWINGS ALSO CHAN H-2-79865 SH 3.6 R H-2-98995 SH 1 REV H-2-69352 SH1 REV4 H-2-69354 SH1 REV4	EV1	INCLUDE:				
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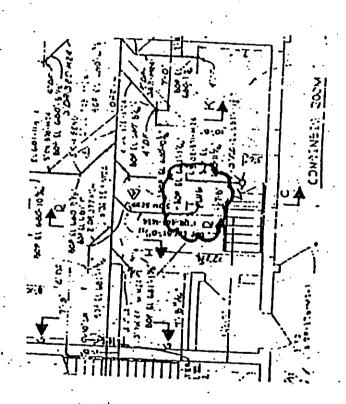
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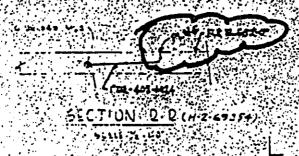
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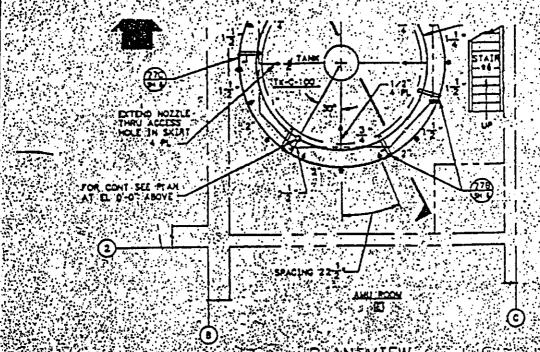
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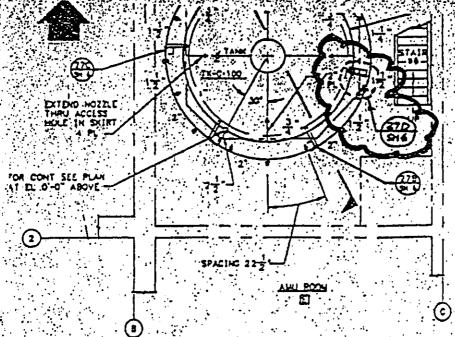


## H-Z-79865, Sht. 3, Rev. 1, (200E A-7):



CONDENSER FORM BELOW ELL O'-O'

IS: (CUT EXISTING SUPPORT AND RELOCATE BOTTOM DELUGE)
SYSTEM PIPE SUPPORT AS NECESSARY TO CLEAR P-CIOO MOTOR.



CONDENSER SOOM BELOW EL 0'-0"

VILW SHOWS PLEINE PROM. 12'-0" 10 0'-0" LEVEL IEL EST-0"-0"

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## Hanford Facility RCRA Permit Modification Notification Forms Part III, Chapter 6 and Attachment 36 325 Hazardous Waste Treatment Units

Page 1 of 2

Index

Page 2 of 2: Hanford Facility RCRA Permit, III.6.B.e

### Unit: Permit Part & Chapter: Part III, Chapter 6 and Attachment 36 325 Hazardous Waste Treatment Units Description of Modification: Hanford Facility RCRA Permit, III.6.B.e: III.6.B.e. Prior to introducing dangerous or inixed waste into Within three (3) months of final installation of the new tank, the Permittee shall submit to Ecology a written integrity assessment, which has been reviewed and certified by an independent, qualified, registered professional engineer, in accordance with WAC 173-303-810 (13)(a). Modification Class: 123 Class 11 Class 1 Class 2 Class 3 Please check one of the Classes: Relevant WAC 173-303-830, Appendix I Modification: A.5.a Enter wording of the modification from WAC 173-303-830, Appendix I citation A. General Permit Provisions 5. Schedule of compliance a. Changes in interim compliance dates, with prior approval of the director Submitted by Co-Operator: Reviewed by RL Program Office: Reviewed by Ecology: Reviewed by Ecology: A.K. Ikenberry Date R.F. Christensen Date F. Jamison Date L.E. Ruud Date

Hanford Facility RCRA Permit Modification Notification Form

Class 1 modifications requiring prior Agency approval.

<sup>&</sup>lt;sup>2</sup> This is only an advanced notification of an intended Class <sup>1</sup>1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

<sup>&</sup>lt;sup>3</sup> If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to <sup>1</sup>1, if appropriate.